DRUG & COSMETIC INDUSTRY

JUNE, 1952

FEATURE ARTICLES • •

ANTI-T.B. DRUG PATENTED	Thomas Cifelli, Jr.	742
THE ALCOHOL STORY	Frank Child III	744
HAND CREAM STICKS	Harry Hilfer	746
T.G.A. MEETING		748
PABA	Milton A. Lesser	750
PEPPERMINT OIL PRODUCTION IN OREGON	Leo A. Sciuchetti and Herman C. Forslund	752
PROPRIETARY ASSOCIATION MEETING		754
THE PRESENT AND FUTURE IMPORTANCE OF HOSPITAL EXHIBITS	Arthur F. Gormley	756

DEPARTMENTS • •

KEEPING POSTED	Thomas R. Farrell	737
PACKAGING AND SELLING	Frazer V. Sinclair	759
DOIN'S		765
NEWS	Frank Child III	775
MANAGEMENT FORUM	Francis Chilson	789
READERS' QUESTIONS	Milton A. Lesser	797
INDUSTRY'S BOOKS	Harry G. Kelbly	799
COMPOUNDER'S CORNER	Milton A. Lesser	803
ADVANCING THERAPY	Milton A. Lesser	807
ANIMAL HEALTH	Milton A. Lesser	810
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PERFUMER'S SHELF	Milton A. Lesser	816
ABREAST OF THE MARKETS	Frank Child III	819

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FRANCIS CHILSON, Production Consultant
MILTON A. LESSER, Technical Editor
HARRY G. KELBLY, Raw Material Editor
FRANK CHILD III, News Editor
MAX FRANKEL, Art Director

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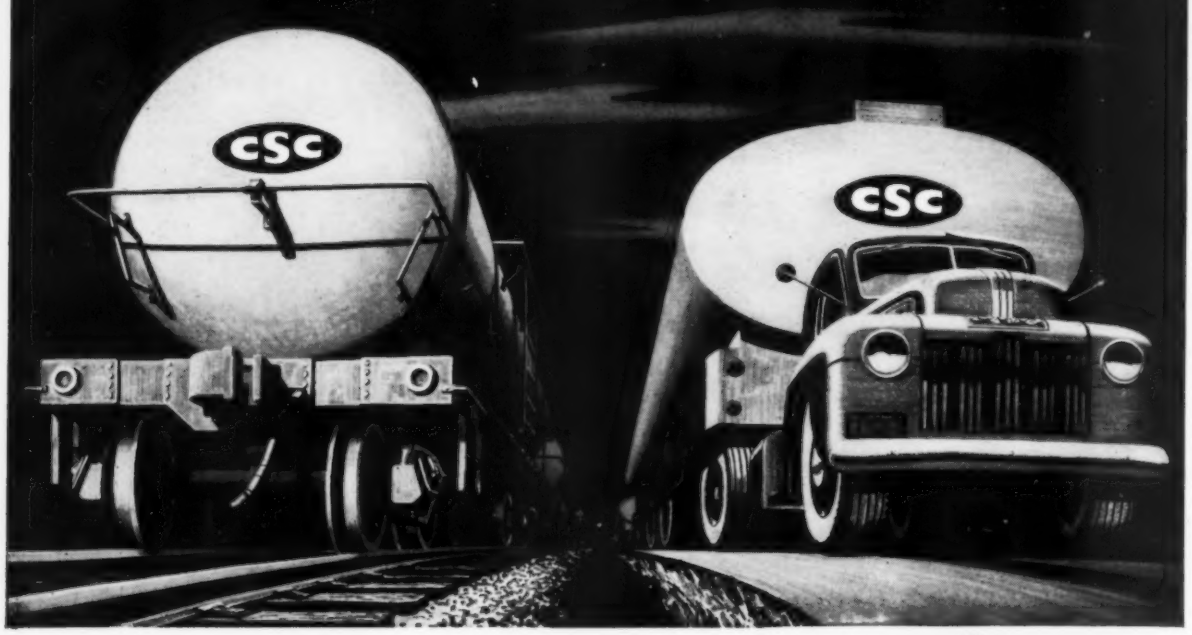

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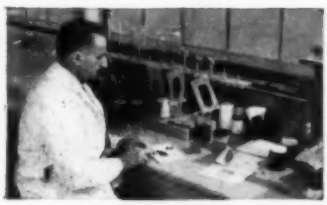

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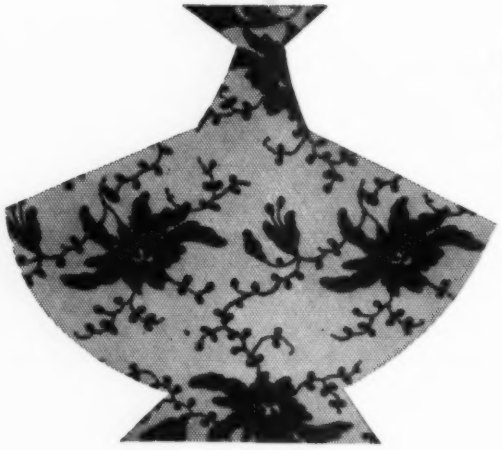

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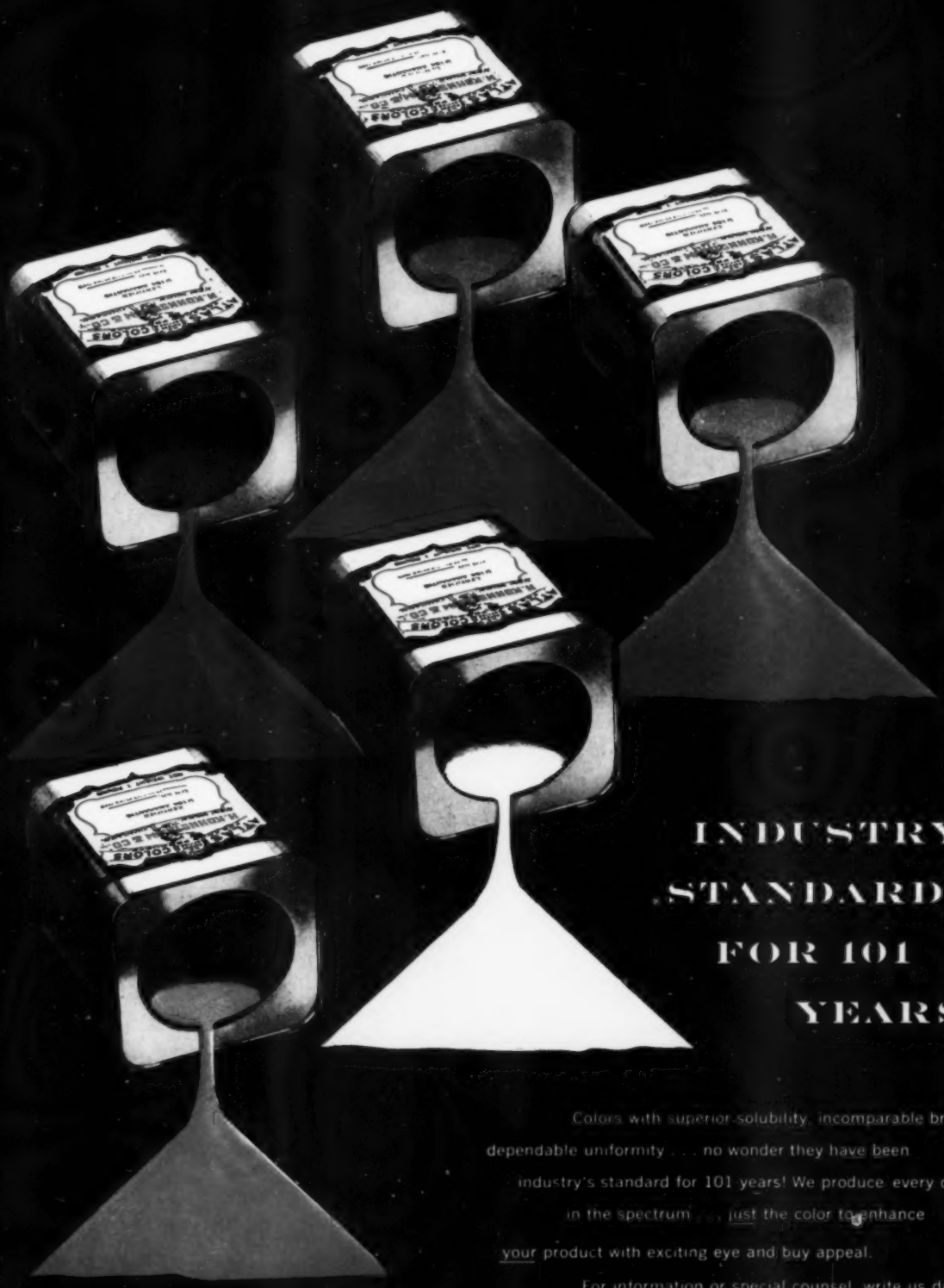

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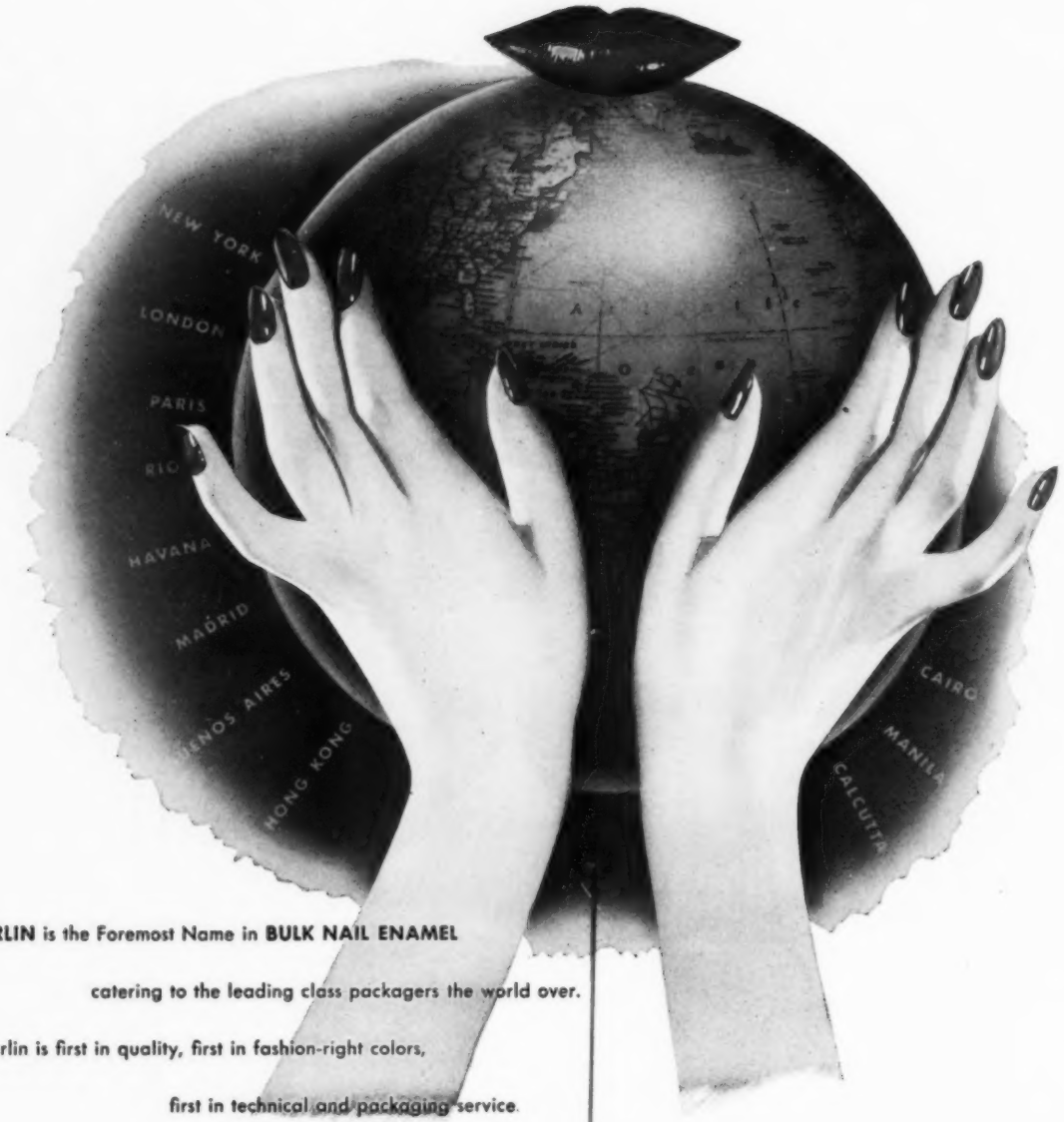

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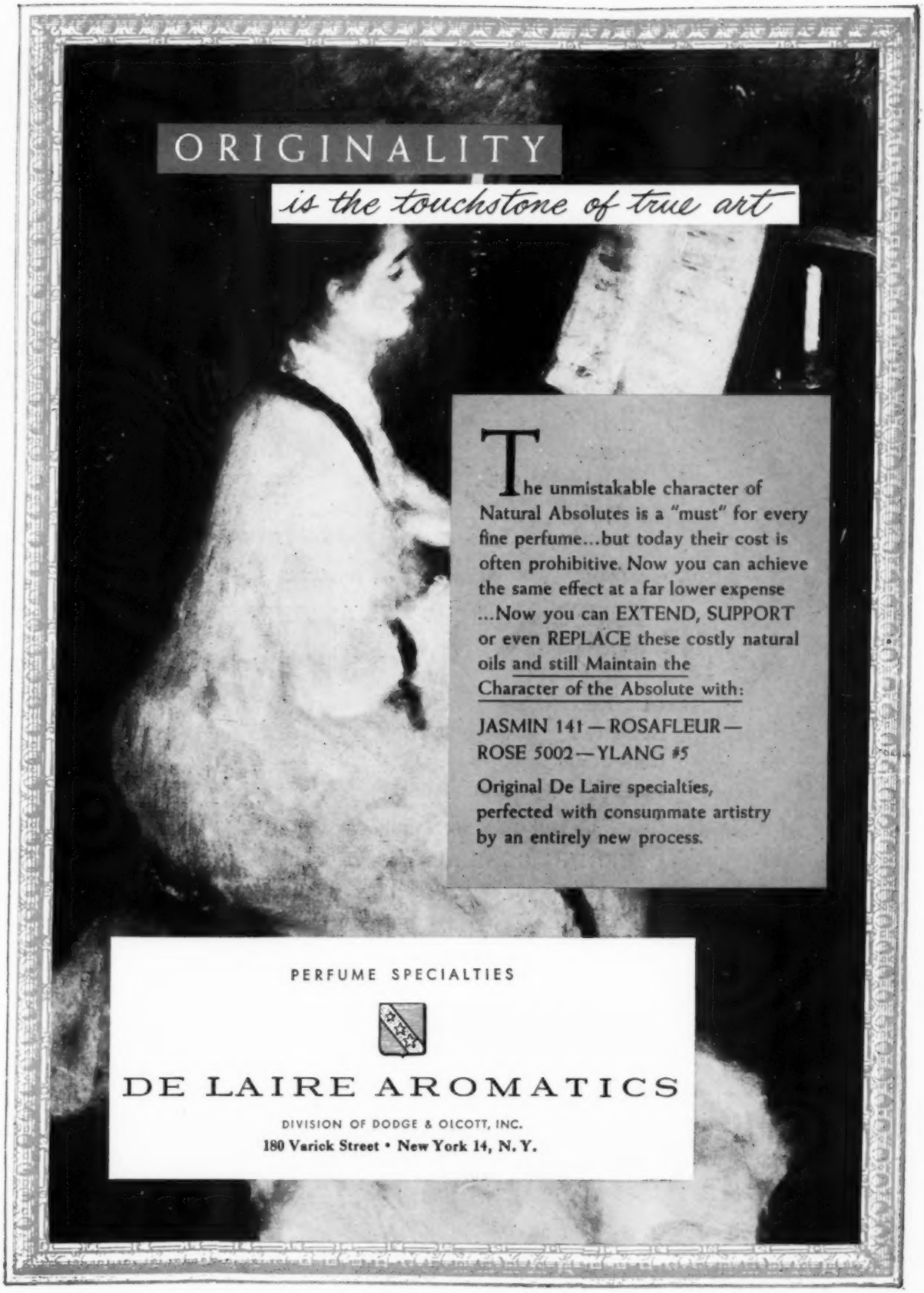
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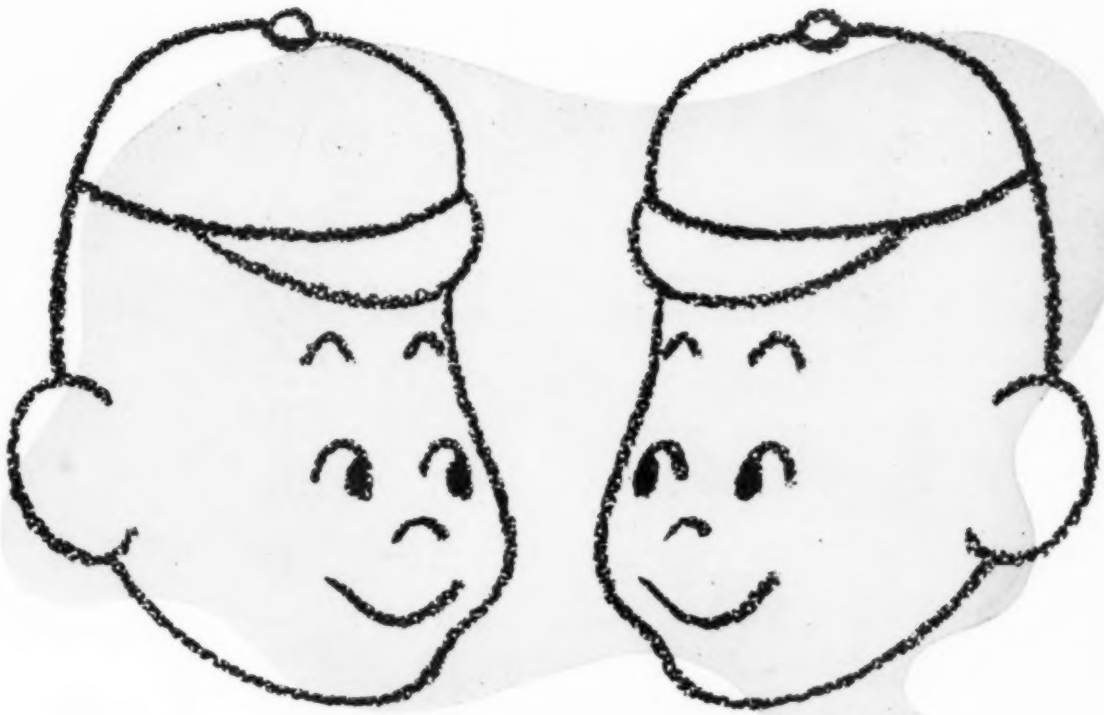

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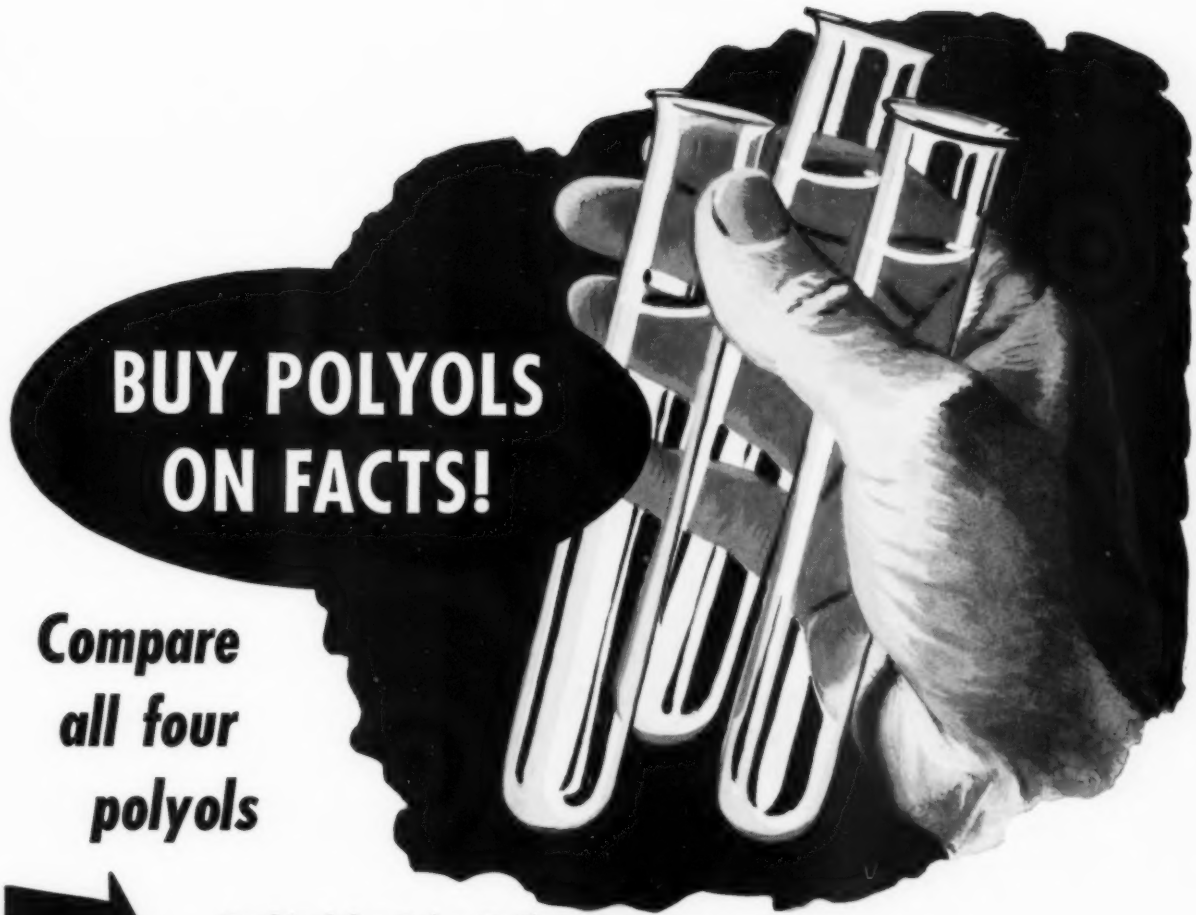

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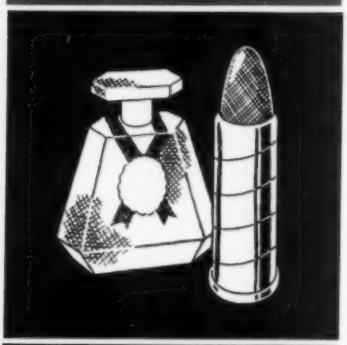

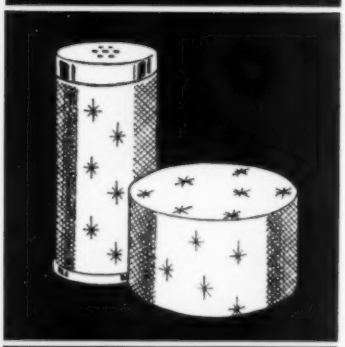

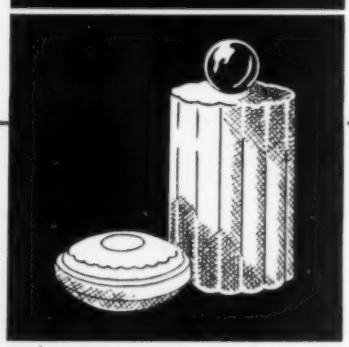

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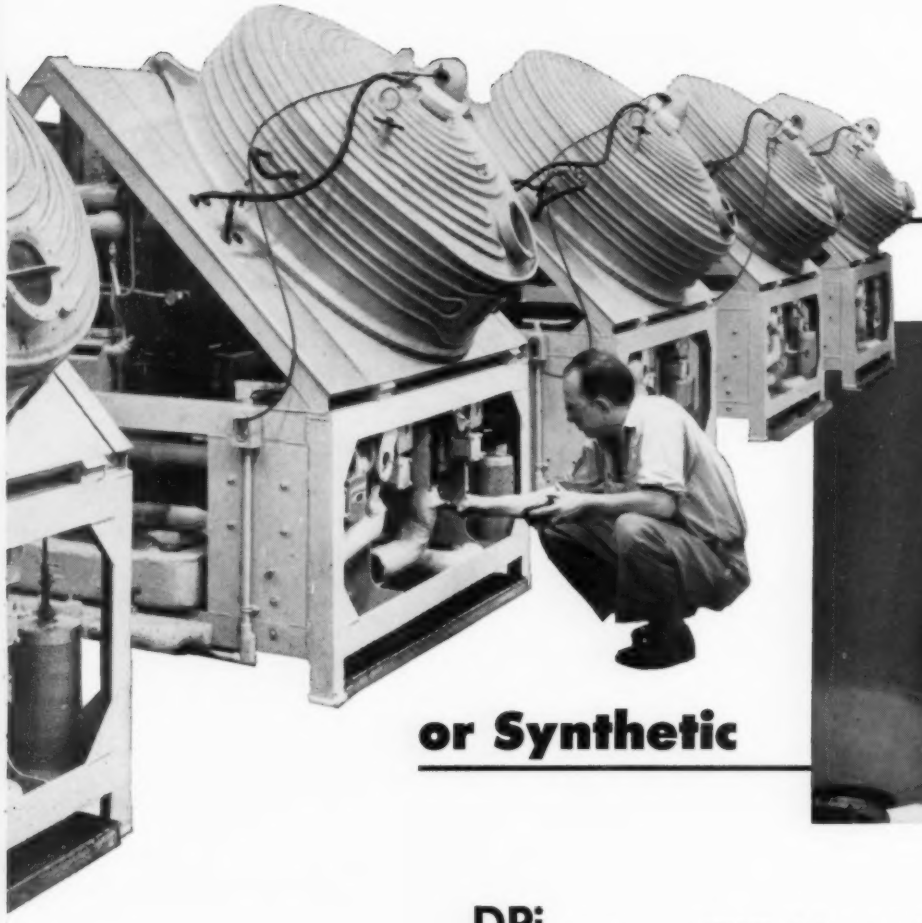

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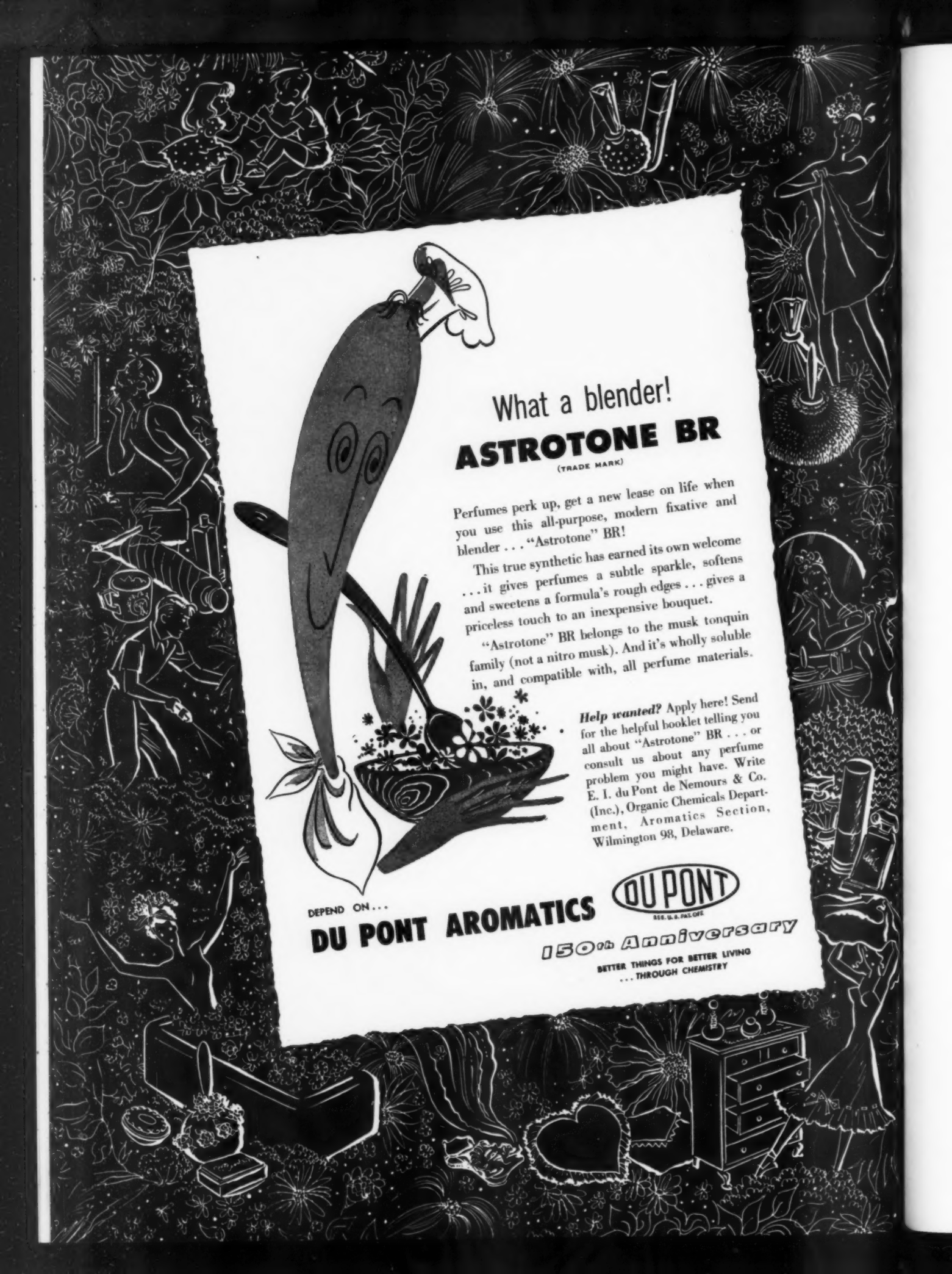
What a blender!
ASTROTONE BR
(TRADE MARK)
Perfumes perk up, get a new lease on life when you use this all-purpose, modern fixative and blender . . . "Astrotone" BR!
This true synthetic has earned its own welcome . . . it gives perfumes a subtle sparkle, softens and sweetens a formula's rough edges . . . gives a priceless touch to an inexpensive bouquet.
"Astrotone" BR belongs to the musk tonquin family (not a nitro musk). And it's wholly soluble in, and compatible with, all perfume materials.
Help wanted? Apply here! Send for the helpful booklet telling you all about "Astrotone" BR . . . or consult us about any perfume problem you might have. Write E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Aromatics Section, Wilmington 98, Delaware.
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look at all the products made with Red Oil

Some of these applications may require a Technical Oleic Acid containing a minimum amount of saturated fatty acids, having a titre in the range of 2°-3°C., exhibiting a cloud point as low as 36°-38°F. Our Groco 2 grade of oleic acid answers these specifications.

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But whatever the demand, all grades of A. Gross' Red Oil yield improved chemical and physical properties due to modern distillation and control. Our products live up to the promises made for them. Sample them and see.

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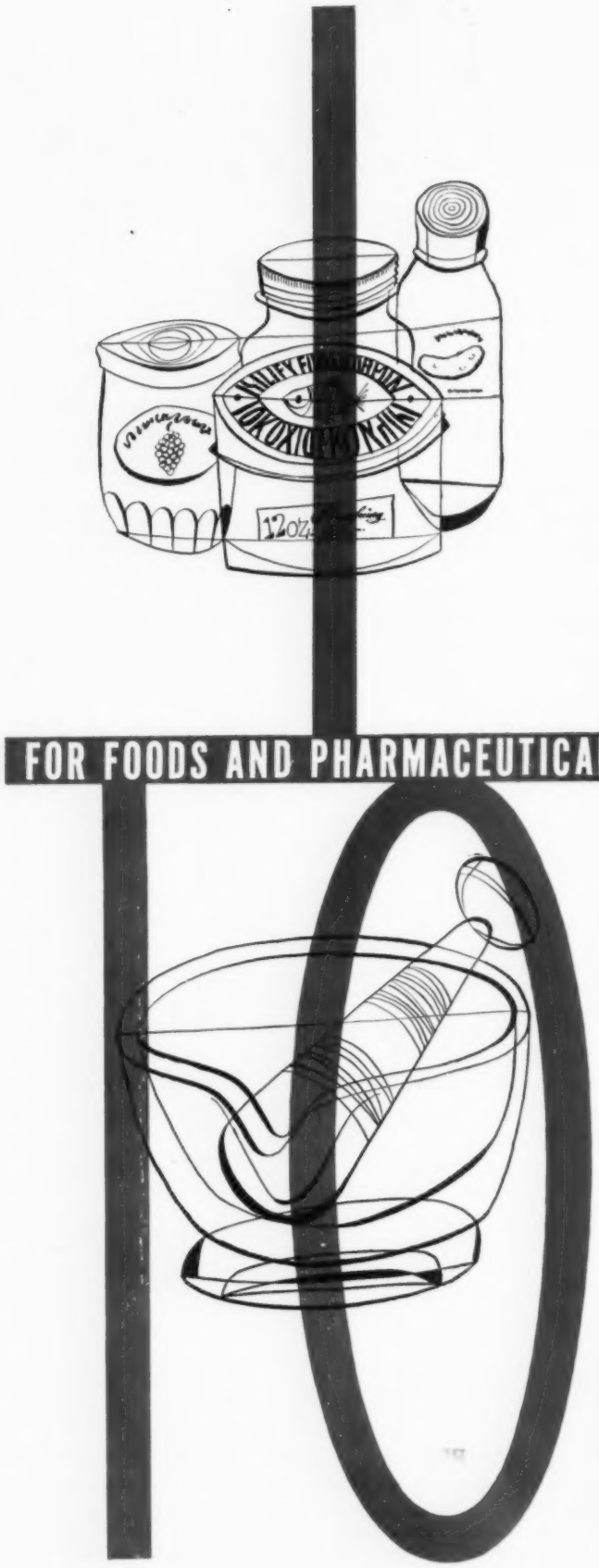

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As little as 1/10 of one per cent of Monsanto Sodium Benzoate, U.S.P., is efficient in preserving foods, beverages and medicinal preparations.

One of the purest chemicals made in commercial quantities, Monsanto Sodium Benzoate is available in flake or powder form. The two forms are equal in quality.

If your products require a preservative, investigate Monsanto Sodium Benzoate, U. S. P., which is available in quantity. Write for a copy of the 16-page booklet, "*Benzoic Acid and the Benzoates*," which is packed with useful information. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

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17 major tests!

to assure lipstick quality

KOLMAR, recognized as America's leader in private label cosmetics, assures *highest quality* and *uniformity* by an intensive program of tests and retests. *Lipstick,* for example, is given 17 major tests and many additional routine tests throughout the entire manufacturing process.

Besides the more or less routine tests, such as melting and softening point; application, correctness of shade, sheen, color distribution, etc., we of Kolmar make special tests such as breaking point, water bleeding and scientific stain analysis. Many of the major tests are done with micro-photographs (magnified 400 times).

Kolmar's testing program is continuous from the raw materials to the finished product. Every batch of lipstick made, regardless of size, is not only given the 17 major tests, but all the tests are repeated and repeated until the batch is used up. Only a few of the 17 major tests are listed here, but we shall be glad to reveal Kolmar's complete testing data to interested parties.

KOLMAR methods are unique. Its various plants across the country are staffed by *experienced chemists and highly trained technicians,* continually seeking new and better methods . . . and when necessary, inventing and producing special machinery and equipment to achieve the results desired. Thus KOLMAR Laboratories are recognized as *originators, pioneers* and *leaders* in the creation of finer cosmetic products.

Kolmar Private Label Cosmetics give you the ultimate in consumer appeal and satisfaction. Consultation will not obligate you.

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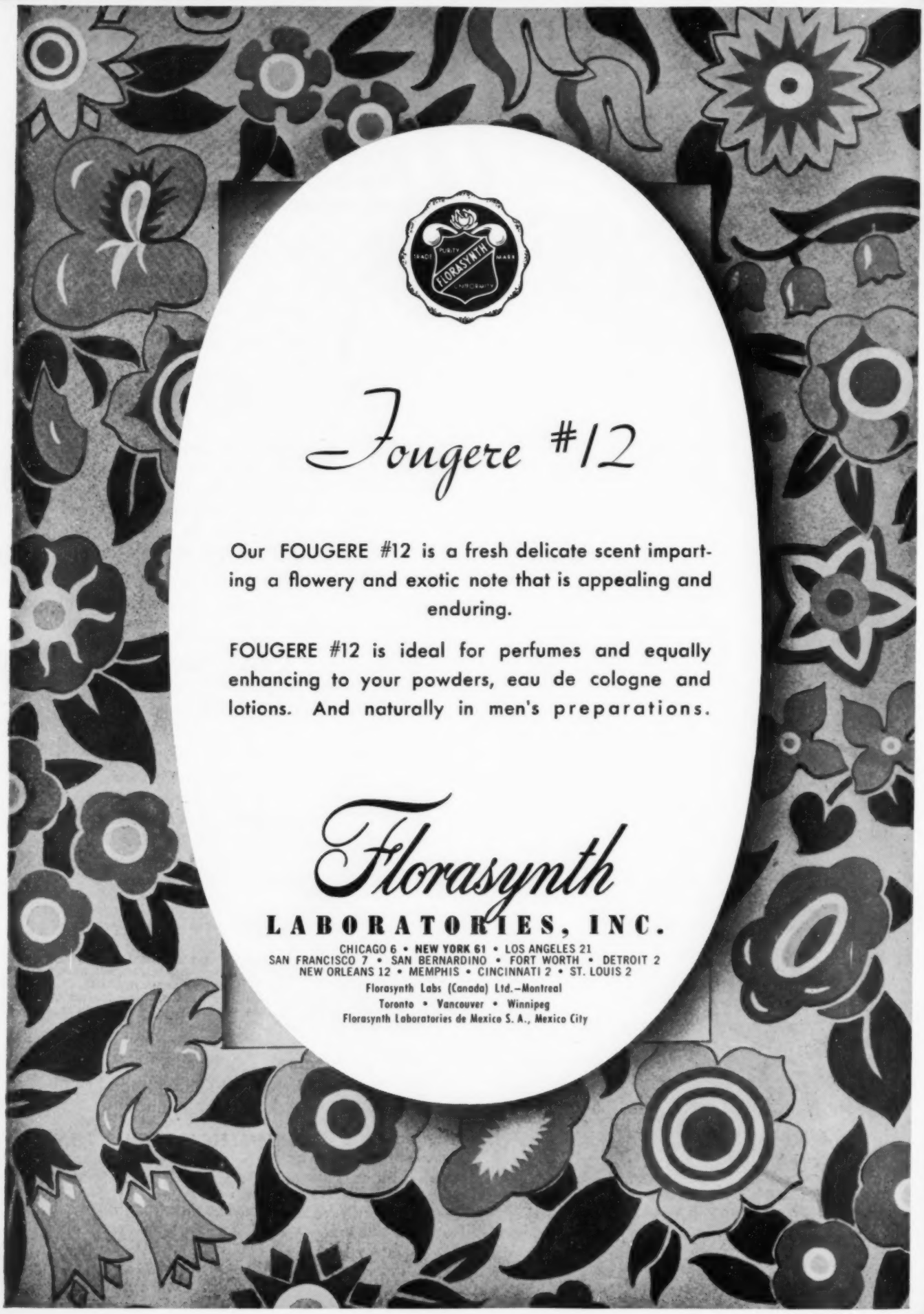
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Our FOUGERE #12 is a fresh delicate scent imparting a flowery and exotic note that is appealing and enduring.
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by KOLAR as well as by your own plant

Reasons: KOLAR'S volume buying . . . chemical laboratory testing . . . latest automatic and semi-automatic machines and conveyors . . . carefully trained personnel . . . rigid quality control . . . new larger building . . . over 42 years' specialized cosmetic experience . . . all applied to products of many cosmetic manufacturers and distributors so as to maintain the highest standards of efficiency at lowest per unit costs.

and certainly can be BETTER SUPPLIED and DISTRIBUTED

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Even if you are now operating your own plant, get the facts and figures on KOLAR'S taking over your manufacturing, packaging, warehousing and distribution for areas remote from your base. Your inquiry, as well as any future KOLAR participation in your operations, will be treated in strictest confidence and your interests will be fully safeguarded. Address President George G. Kolar.

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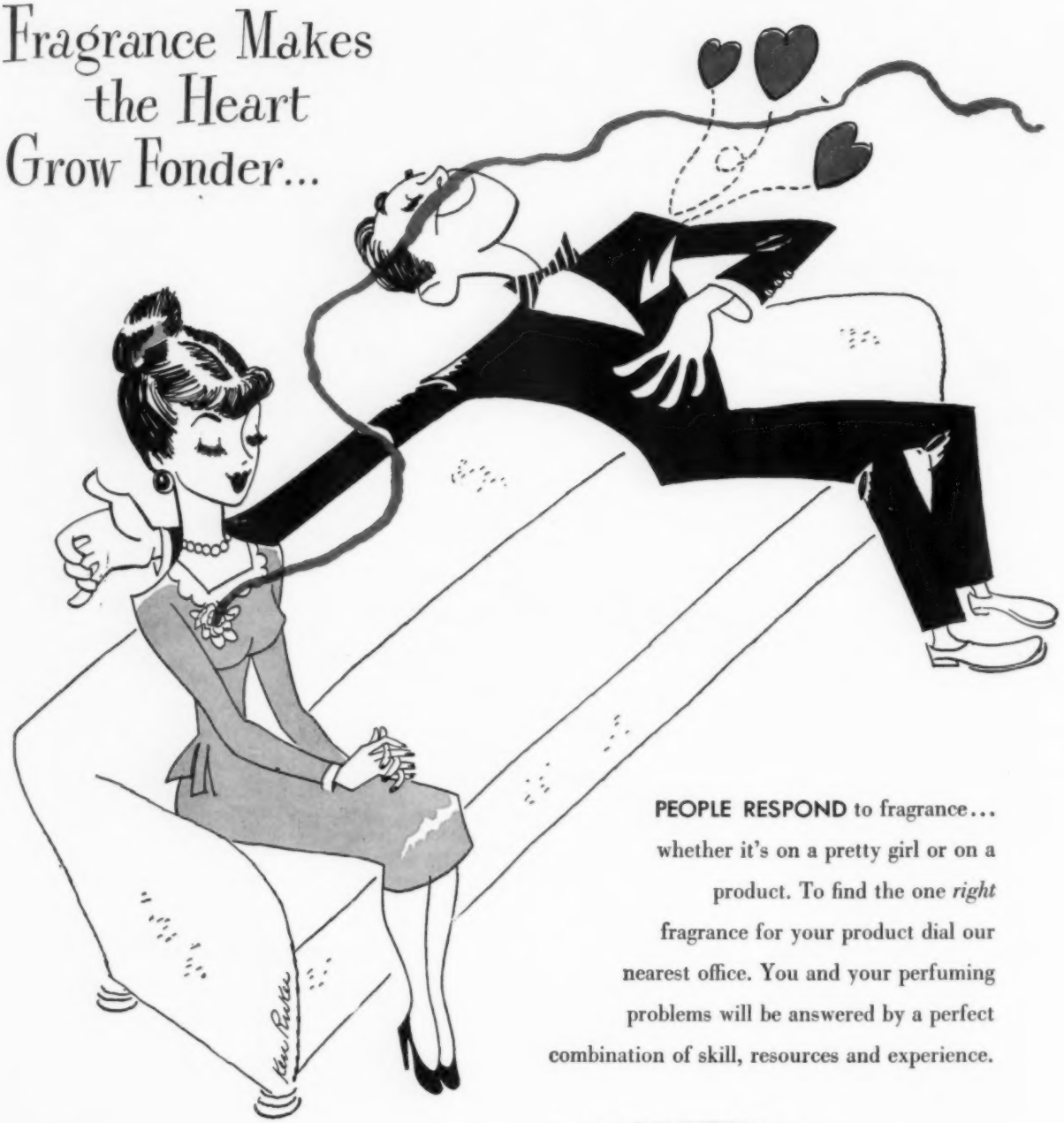

PEOPLE RESPOND to fragrance... whether it's on a pretty girl or on a product. To find the one *right* fragrance for your product dial our nearest office. You and your perfuming problems will be answered by a perfect combination of skill, resources and experience.

NAUGAROMES—For various industrial and commercial uses.

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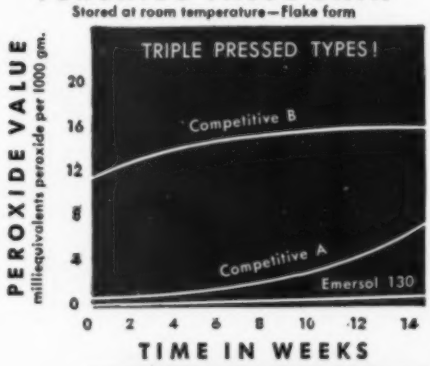
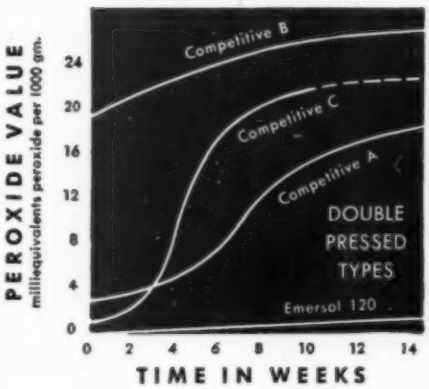
Don't take chances with just any stearic acid . . . get an Emersol Stearic Acid and insure highest possible stability, as shown first by oxygen absorption tests, which proved them to be (depending on grades) from 2-5 times more resistant than competitive types. And now peroxide value tests during aging, again illustrate their superior resistance to oxidation, which means superior resistance to rancidity.

PEROXIDE VALUE DATA
Stored at room temperature—Flake form





Emersol Stearic and Palmitic Acids Make Quality Products Even Finer!

Remember . . . the stability of your products depends largely upon the stability of the fatty acids used! Join the changeover and be sure your products exhibit the highest resistance to color, odor and oxidation degradation at no extra cost. Buy Emersol Stearic and Palmitic Acids and be sure that your products have that fresh, natural appeal, and that they keep it longer!

*Peroxide Value indicates the quantities of peroxides, which are present in fatty products as the result of oxidation reactions. Therefore, lower peroxide values indicate greater resistance to oxidation.

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for you a lower cost together with
the improvement of your fragrance

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U.S.I. CHEMICAL NEWS

June ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1952

20th Anniversary

1932 · 1952

This is the 20th anniversary issue of U.S.I. CHEMICAL NEWS. This series for chemists and executives of the solvents and chemical consuming industries started in June 1932. For a brief history of the "NEWS," see the article at the bottom of column one on this page.

Make Plasma Substitute From Discarded Red Cells

Scientists believe they have found a substitute for blood plasma in a new substance derived from red blood cells, according to a recent announcement. The product consists of proteins taken from red cells and prepared so that they can dissolve in the blood stream and feed the body in the same way that plasma does. Since red cells are largely wasted in present processes, the new substance is cheaper to produce than plasma and will increase the protein yield of each blood donation by more than three times, it is claimed. The protein part is said to be the most valuable when plasma is given for nutrition or to combat shock.

New Chemical Weed-Killer Produced by U.S.I.

New Herbicide, Applied to Soil as Pre-Emergent Spray, Controls Grassy Weeds in Many Broad-Leaf Crops

Marking the latest expansion in its aggressive program to provide the agricultural world with safe and effective controls, U.S.I. recently announced its commercial production of IPC, a new chemical weed killer. Up to now, U.S.I.'s agricultural line has been concentrated on a wide range of insecticide and insectifuge materials. IPC is the first herbicide to be added to U.S.I.'s long list of valuable products.

U.S.I. Tests Demonstrating IPC's Effectiveness

IPC (isopropyl N-phenyl carbamate) is a new type of weed killer which is designed to be applied as a pre-emergent spray to the soil rather than to the weeds themselves. In most cases, the chemical acts as a selective grass killer, eliminating grassy weeds from many broad-leaf crops without harming the valuable plants. IPC is applied evenly over the soil surface, after which moisture from rains or irrigation water, carries it into the root area of the soil. The chemical acts on the expanding embryos of seeds as well as on root systems that have already developed so that

MORE

Vitamin B_{12} Counteracts Growth Depressing Action Of Alfalfa in Chicks

Recent research in poultry nutrition is reported to have shown that vitamin B_{12} is effective in overcoming the growth inhibiting properties of alfalfa. Dehydrated alfalfa meal is a common ingredient of practical poultry rations. Feeding of alfalfa to chicks is said to be subject to limitation, however, because of the growth depressing effects it has when fed at high levels. In experiments conducted at a leading midwestern college, vitamin B_{12} was found to be capable of counteracting the unknown toxic factors in alfalfa, and to produce in chicks a marked improvement in livability and growth under the experimental conditions.

U.S.I. Chemical News Celebrates 20th Anniversary with This Issue

Famed News Sheet Has Served Industry Since June 1932

With the current issue, U.S.I. proudly marks the 20th anniversary of its popular news-insert advertisement, U.S.I. CHEMICAL NEWS. This issue you are now reading is the 241st "blue sheet" to be published since June 1932 when the record-breaking series began in leading chemical and drug publications. The name on the masthead then was SOLVENT NEWS, U.S.I. being at that time primarily a producer of solvents and plasticizers. Its purpose – then a new idea in advertising – was to furnish chemists, purchasing agents, and executives of the solvent-consuming industries with up-to-date information on markets, prices and technical developments in their field. Industry immediately recognized the "NEWS" as a valuable service. Soon after it appeared, inquiries concerning news items were averaging a hundred per month. At the present time, more than 500 inquiries are received each month.

As U.S.I. continued to broaden its activities beyond the manufacture of solvents and plasticizers, the scope of SOLVENT NEWS also expanded. In May 1940, the name was changed to U.S.I. CHEMICAL NEWS, a reflection of the company's growth in the chemical and

MORE

SOLVENT NEWS

ALCOHOL PRICES RELEASED TO THE INDUSTRY FOR THIRD QUARTER

NO CHANGE FROM PRESENT LEVELS

ETHYL ACETO ACETATE DEMONSTRATES VERSATILITY

DU PONT OFFERS NEW WATERPROOF MATERIAL

NEW LACQUER LINSEED OIL ANNOUNCED

The first U.S.I. "blue sheet"—June, 1932.

Polyvinyl Acetate Makes Concrete Mortar Stronger

Recent work has reportedly shown that polyvinyl acetate can be added to concrete mortar to increase strength of the cured products as much as three times over that of pure cement mixes. PVA mortars are also claimed to be superior to pure concrete in having greater resistance to abrasion and higher impact strength, and in not cracking under sudden loads and thermal stresses. Best results have been obtained with a polymer to cement ratio of 1 to 5. No plasticizer is required in adding the plastic. Uses suggested for PVA mortars include floor toppings and road surfacings, wall and ceiling cement plasters, and masonry surfaces where self curing and bond strengths are extremely important.

June ★ **U.S.I. CHEMICAL NEWS** ★ 1952

CONTINUED

New Weed-Killer

it is able to prevent as well as kill weed growth. When the roots or seeds of affected grasses come into contact with even minute amounts of IPC, cell division within the plants is seriously disrupted and growth is arrested. If the plants are small, they generally die within two weeks. Older grasses take longer to die, but their growth is effectively stopped upon exposure to the chemical.

The herbicide will remain active in most soils for periods of 30 days or more. It does not build up in the soil, however, so that it has no cumulative effect. Generally, low temperatures and low incidence of soil bacteria tend to lengthen the life of the material in the soil. IPC does not move laterally in the soil from the spot to which it is applied. One of its principal advantages is its latitude of safe dosages which results from its extreme selective phytotoxicity. Uniformity of application, while desirable, is not as critical as with most other herbicides.

Stable, Non-Corrosive

U.S.I.'s product, which is furnished in 98 percent minimum purity, is in the form of fine, easily dissolved needle-like crystals, white to light gray in color. The compound is stable at storage conditions for indefinite periods, and it is non-corrosive to metals normally employed in handling and application equipment. IPC is apparently not toxic to humans or animals, but the ordinary precautions in regard to skin contact and continued inhalation should be observed in handling it as with any other organic chemical material.

Nucleus Has Orbits, Too

Recent nuclear research is reported to indicate that protons and neutrons within the nucleus have regular orbits and closed shells in much the same manner as external electrons. Many quantitative aspects of radioactive decay can be explained by shell effects, with closed shells accounting for the unusual stability of nuclei of some atoms, it is said. Small energy effects can be related to changes in sub-shell structure within the nucleus.

CONTINUED

20th Anniversary

fast growing synthetic resin fields. Today, except for wider news coverage, the original editorial policy of "service to industry" is still followed.

News sources for U.S.I. CHEMICAL NEWS, called by some readers "the front page of the chemical industry," are as varied as those of larger technical publications. Manufacturers regard it as a primary outlet for news of their new products and are quick to forward their announcements to the editor. The "NEWS" has often scooped its bigger counterparts on stories. Research men and engineers are on record as saying that they never miss the "Technical Developments" column, which in 20 years has carried announcements of more than 2,400 new products and processes.

The series has never missed a month since it started. All 241 numbers have been printed in blue on distinctive light blue stock—a trade mark that was maintained only with difficulty during war-time scarcities. At one point, it was even necessary to use an over-all color plate to pre-print the light blue because paper of that color could not be obtained.

U.S.I. CHEMICAL NEWS appears regularly in seven publications, giving it a circulation of more than 180,000. An additional 12,000 members of chemical and related industries receive the "NEWS" in the form of a 4-page mailing piece.

New Booklet Describes Synthetic Waxes, Uses

Synthetic waxes with a wide range of physical properties are fully described in a new catalog, recently made available. The waxes include amide and ester types which range in hardness from soft to brittle and in melting points from 55° C. to 143° C. Use data are listed for such applications as coatings, lubricants, anti-tack agents, electrical insulation, flatting agents, and drawing compounds.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U. S. I.

New polytetrafluoroethylene pipe, reinforced with glass fiber, is claimed to be rigid and strong in wall sections as thin as 0.030 in. and to be suitable for use with virtually every known chemical. **(No. 809)**

A new rubber-phenolic varnish is said to permit the manufacture of laminated plastics with two to three times the impact strength of those made with conventional varnishes. Gears, tubing, castor wheels, and paper coatings are among expected applications. **(No. 810)**

A liquid polyvinyl chloride stabilizer, containing barium and calcium soaps and a synergist, is reported to impart good initial color and clarity, to be efficient under dynamic heat conditions, and to require no pregrinding for complete dispersion. **(No. 811)**

Metallic lead dust homogenized in heavy-duty grease is said to provide a new lubricant which resurfaces pitted and scored bearings and gears and forms self-lubricating surfaces over all wearing parts. **(No. 812)**

Tap water becomes chemically pure when it is squeezed from a new polyethylene bottle having a special deionizing filter fitted in the neck like a stopper. Filter processes up to 20 gallons and changes color when consumed, according to the manufacturer. **(No. 813)**

An aluminum tinting paste, claimed to give a brighter finish than conventional aluminum pigments without interfering with true color values, is now available for use in auto and household finishes. **(No. 814)**

A new automatic burette, available in 10 and 25 ml. sizes, can be filled to the zero-mark simply by squeezing the polyethylene reservoir into which it fits. A polyethylene delivery tube is said to offer further safety from breakage. **(No. 815)**

To make solid derivatives of alcohols and phenols that can be separated and purified easily, N-bromophthalimide is being offered as a new laboratory reagent. Compound is reported to minimize formation of side products and to be stable and easy to store. **(No. 816)**

Carbon formation can be prevented in any internal combustion engine or oil burner, it is claimed, by using a new blending agent in the fuel which liberates free oxygen upon ignition, making the flame cleaner and hotter. **(No. 817)**

A non-explosive, non-toxic litho blanket and roller wash for printers contains no carbon tetrachloride or coal tar solvents, is an efficient, quick-drying solvent, and is entirely safe to use, the manufacturer states. **(No. 818)**

To adhere silicone-treated surfaces of paper, wood, ceramics, and metals, a new adhesive is available which can be used as efficiently in high-speed gluing machines as any standard adhesive. **(No. 819)**

PRODUCTS OF U.S.I.

ALCOHOLS
Amyl Alcohol (Isoamyl Alcohol)
Butanol (Normal-Butyl Alcohol)
Fusel Oil—Refined
Propanol (Normal-Propyl Alcohol)

Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof U.S.P., Absolute—200 Proof
Solox*—proprietary solvent—regular and anhydrous

ANTI-FREEZE
Super Pyro* Anti-Freeze
U.S.I. Permanent Anti-Freeze

ETHERS
Ethyl Ether, U.S.P.
Ethyl Ether, Absolute—A.C.S.

ACETONE — A.C.S.

ANSOLS
Ansol* M
Ansol* PR

ACETIC ESTERS
Amyl Acetate—Commercial and High Test
Butyl Acetate
Ethyl Acetate—all grades
Normal-Propyl Acetate

OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS
Diatol*
Diethyl Carbonate
Ethyl Chloroformate

RESINS (Synthetic and Natural)
Arochem*—modified types
Arodure*—urea-formaldehyde resins
Arofene*—pure phenolics
Aroflat*—for special flat finishes
Aroflint†—room temperature curing phenolic
Aroplaz*—alkyds and allied materials
Aropol†—copolymer modified alkyds
Ester Gums—all types
Natural Resins—all standard grades

INSECTICIDE MATERIALS
CPR Concentrates: Liquid & Dust
Piperonyl Butoxide
Piperonyl Cyclonene
Pyrenone* Concentrates: Liquid & Dust
Pyrethrum Products: Liquid & Dust
Rotenone Products: Liquid & Dust

INSECTIFUGE MATERIALS
Indalone*
Triple-Mix Repellents

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-chloroanilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloroanilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

FEED PRODUCTS
Calcium Pantothenate (Feed Grade)
Curbay B-G*
DL-Methionine (Feed Grade)
Niacin, U.S.P.
Riboflavin Concentrates
Special Liquid Curbay*
U.S.I. Vitamin B_{12} and Antibiotic Feed Supplements
Vacatone* 40

OTHER PRODUCTS
Collodions
Ethylene
Methionine (Pharm. Grade)
Nitrocellulose solns.
PiB*—Liquid Insulation
Special Chemicals and Solvents
Urethan, U.S.P.
Acetaldehyde

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Division of National Distillers Products Corporation

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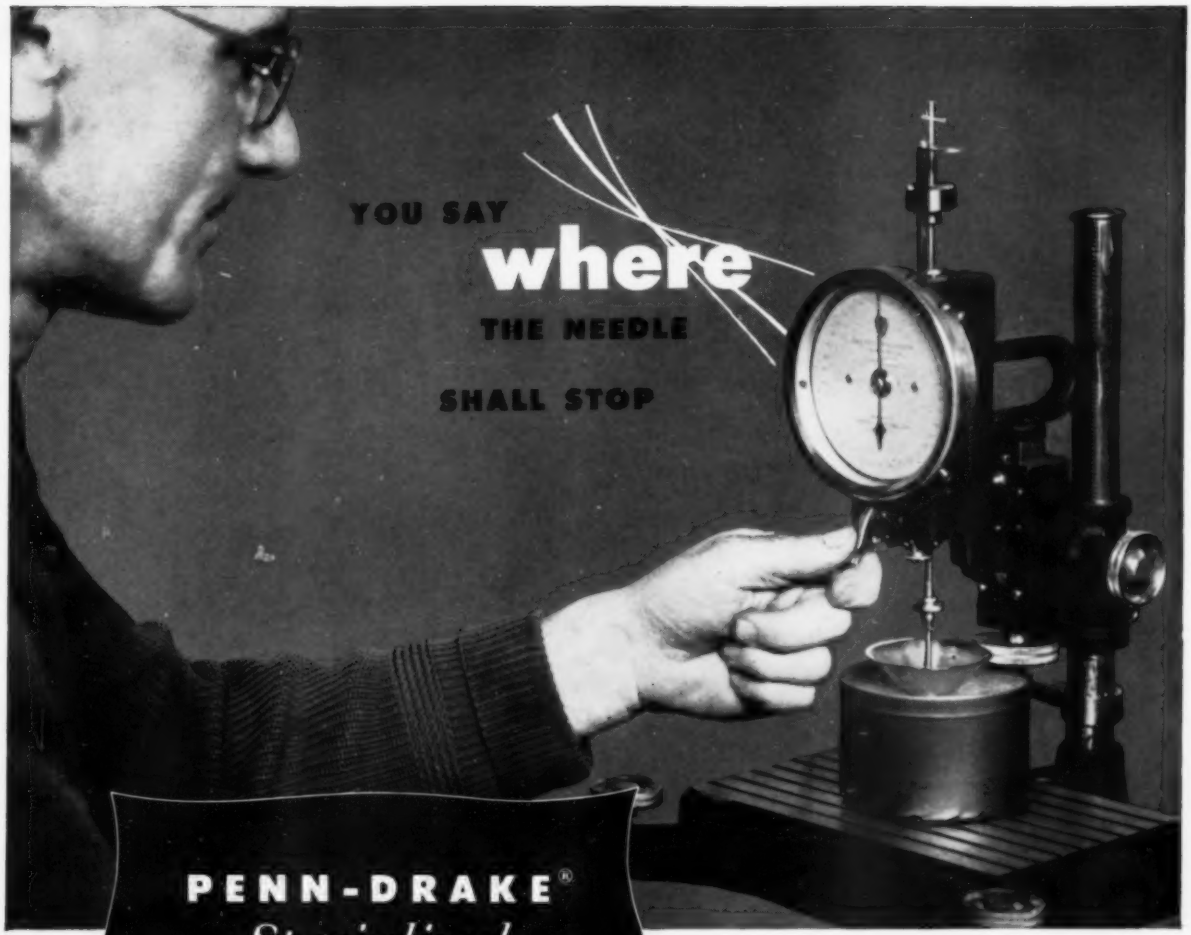

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If you require a petrolatum with distinctly different specifications . . . call on Penn-Drake Specialized Customer Service. Through this service we work with you in developing custom-made products.

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GENERAL OFFICES: BUTLER, PENNSYLVANIA
Refinery at KARNS CITY, PENNSYLVANIA
Branches:* Cleveland, Ohio; Edgewater, N. J.** ***Representatives in Principal Cities

MAKERS OF: White Oils (U.S.P., N.F. and Technical); Petrolatums (all grades and colors); INSECTI-SOL (deodorized insecticide base); Deodorized and other Naphthas; Petroleum Sulfonates, Waxes; Industrial and Motor Lubricants and Greases; Fuel Oils, and other petroleum products.

penn drake products

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As rubber mold lubricants they give quick, clean release from the mold and impart an attractive finish to the rubber. And they burn out almost completely during the fabricating cycle without excessive carbon build-up.

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Besides their lubricating action and water-solubility, CARBOWAX compounds have the advantage of being white in color, bland and non-irritating to the skin, and solvents for many medicaments. These properties have made them popular as ointment bases for drugs and cosmetics. Their water-solubility insures effective action by the medicaments and complete coverage of tissue areas, as well as easy removal.

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The term "Carbowax" is a registered trade-mark of Union Carbide and Carbon Corporation.

Other uses of these unusual products include: metal extrusion operations, lubricants and humectants in steam-set inks, water-soluble bases for decalcomanias, plasticizers in adhesives, solvents in fire-fighting foams, binders for ceramic colors, additives in tin-plating solutions, and intermediates for the preparation of non-ionic surface-active agents and resins.

CARBOWAX *compounds are available for immediate shipment in commercial quantities. For samples and further information call or write the nearest of CARBIDE's 21 offices.*

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A Division of
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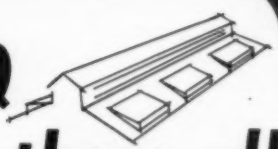

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This year, Americans will suffer from an estimated 300,000,000 colds. With the greatest incidence during certain critical months, you'll want to get your "cold" products ready now for Winter calls. To help you with your formulating, Merck offers a complete line of medicinal chemicals of outstanding purity, uniformity, and dependability. By ordering early, you can assure yourself of rapid delivery and complete selection.

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- Quinine Alkaloid N.F. and Salts

ANTACIDS
- Calcium Carbonate Precip. U.S.P.
- Magnesium Carbonate U.S.P.
- Magnesium Hydroxide N.F.
- Magnesium Trisilicate U.S.P.

ANTIBACTERIALS
- Sulfanilamide U.S.P.
- Sulfapyridine N.F.
- Sulfapyridine Sodium
- Sulfathiazole U.S.P.
- Sulfathiazole Sodium U.S.P.

ANTIBIOTICS
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- Penicillin G Sodium Cryst. U.S.P.
- Procaine Penicillin G Cryst.
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- Streptomycin Sulfate
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ANTIHISTAMINE
- Pyrilamine Maleate

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- Potassium Bromide U.S.P.
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- Phenobarbital U.S.P.
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- Caffeine, Citrated N.F.

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Provides a straight line to the most profitable points of sale.

1 *Reaches the retailers who know how to sell perfumes and cosmetics and who do sell well over 80% of these products, except low priced, mass distributed toiletries.*

2 *These retailers are nearly all (86%) located in the 168 metropolitan markets which do 75.27% of all apparel sales and over 85% of the perfume and cosmetic sales of selected cosmetic distribution.*

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These suppositories partially liquefy after a few minutes retention in the rectum and the properties of the Glycerin assist in inducing evacuation of the lower bowel. These suppositories are supplied in two sizes —for adults and for children.
KEEP TIGHTLY CLOSED AND IN A COOL PLACE
MADE IN U.S.A.
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GLYCERIN SUPPOSITORIES
Nothing takes the place of Glycerine

For 25 years McKesson and Robbins' formula for Glycerine suppositories has remained unchanged. Public confidence in Glycerine as an effective ingredient has been thoroughly demonstrated by the wide acceptance of this product as a familiar "medicine cabinet" accessory.

FULLY ACCEPTED... FULLY AVAILABLE IN ALL GRADES!

U.S.P. Glycerine—in children's and adult suppositories—has long been an indispensable ingredient among drug manufacturers . . . primarily for its mild stimulating and lubricating qualities.

But versatile Glycerine often contributes a great many more advantages to jelly- or emulsion-based preparations of this type. For instance, its hygroscopic action keeps the mixture from drying out. It's a natural plasticizer. And in salves for topical use, U.S.P. Glycerine acts as an ideal solvent for the medicament.

Hundreds of applications in a host of proprietary pharmaceuticals attest to the fact that Glycerine has won the trust of American consumers over the years . . . that its presence on your label is accepted instantly . . . that it is widely recognized as a product which can be safely applied internally or externally. We've outlined some of these applications in a booklet, "Why Glycerine for Drugs and Cosmetics?" Write for your copy—today!

GLYCERINE PRODUCERS' ASSOCIATION

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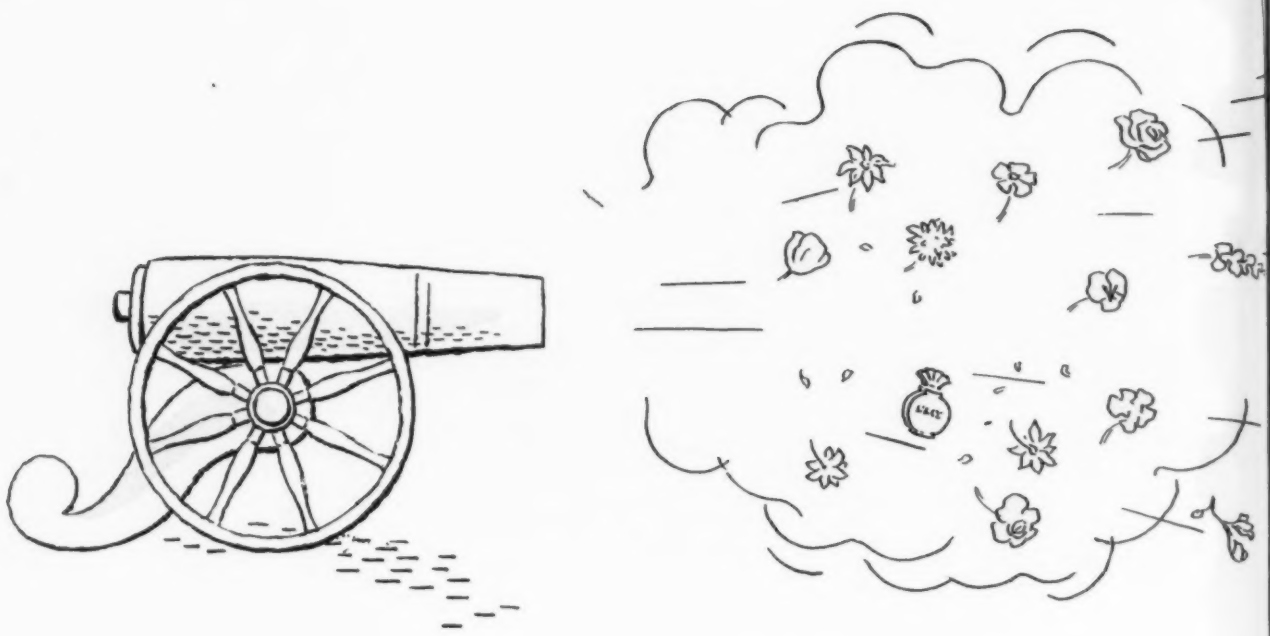

WHAT'S YOUR TARGET?

The discriminating selection of an inspired fragrance for your new product, is of highest importance to its ultimate success. Whatever market you are shooting for, plan the fragrance with an appropriate appeal to that *market*.

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facts you may want to know about—

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advanced methods

Mallinckrodt began the production of phenobarbital in 1929 and is now one of the foremost producers in the United States.

In 1939-40 Mallinckrodt developed improved methods for producing phenobarbital (U. S. Patents 2,346,059; 2,351,085; 2,358,768; 2,367,632; 2,454,360; 2,478,853). Extension of this research led to new and useful methods for metallation, carbolkoxylation, and alkylation of organic compounds. (J. Am. Chem. Soc. *63*, 2056, 2252 (1941); *64*, 576, 578, 580 (1942).

prompt delivery

Modern plant facilities for large-scale production, and warehouse stocks at New York, St. Louis and Los Angeles, enable Mallinckrodt to supply promptly the needs of manufacturers in every area.

Mallinckrodt phenobarbital is supplied in 100 lb. leverpak drums, 25 lb. fiber drums and in subdivision packages.

grades available

Mallinckrodt phenobarbital is available in the following forms:

Phenobarbital USP XIV Fine Crystals
Phenobarbital USP XIV Powder
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Phenobarbital Sodium USP XIV Granular (Soluble)
Phenobarbital Sodium USP XIV Powder (Soluble)

Special forms to meet pharmaceutical manufacturers' specifications can be developed for quantity buyers.

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MANUFACTURERS OF FINE CHEMICALS FOR THE PHARMACEUTICAL INDUSTRY • SINCE 1867 •

"Our chemists are working on a chlorophyll-ammoniated tooth paste containing penicillin, fluorine, an antihistamine, a lot of vitamins and amino acids, and maybe some cortisone or ACTH."

Keeping Posted

The Chlorophyll Situation

THE situation in chlorophyll appears to have gotten completely out of hand. Certainly no product could be effective over the wide range of applications to which this chemical had been subjected. However, there does not seem to be any slowing down in chlorophyll activity at the present time, and doubtless the bubble will continue to expand for some little time yet before it bursts and chlorophyll assumes the position in the industry to which it is rightfully entitled.

Surprisingly little is known generally about chlorophyll activity, although, at the moment research is being conducted on rather a broad front to obtain the answers which should have been available before many of the present claims were made for it. As a matter of fact, the percentages of chlorophyll in various chlorophyll dentifrices vary widely for several reasons, the main one being that chlorophyll tooth paste manufacturers generally are not certain as to how much chlorophyll is essential for optimum results. Another reason given is that some manufacturers depend on an ammoniated formula to prevent decay, adding the chlorophyll only for its breath-sweetening properties. It is thought that in such instances not as much chlorophyll is needed as in the case of a tooth paste which depends upon chlorophyll alone for protection of the teeth and gums as well as for production of a pleasant breath. A third reason for a certain percentage of chlorophyll has been the amount of chlorophyll available and the production required by the sales department.

Chlorophyll has already been so mishandled by many who are looking for a fast dollar through its incorporation in all sorts of products that it has become good for a laugh in business, in the home, and over the radio and television. Those who are exploiting it have educated the public to an awareness of it, but if the present condition continues it will not be long before organized medicine starts a real campaign to bring the product down to earth. And when this happens, the next step will be that the ethical drug manufacturers will take over the lions' share of the business.

Hoge on Proprietary Drugs

POINTING OUT that the Food, Drug, and Cosmetic Act has divided drugs into two classes: prescription and over-the-counter, Proprietary Association General Counsel James F. Hoge, told the association at its annual meeting last month that "the Durham-Humphrey Bill has confirmed and solidified that division. By its stated terms, there is no longer any question but what medicinal drugs are of these two classes."

"That Act may also give added incentive to the rising development of business in packaged goods among pharmaceutical companies which do not advertise directly to the public," continued Mr. Hoge. "Such goods, packaged and labeled and usually bearing trade-marks, ready for sale over-the-counter and for self-use by the consumer, are themselves proprietary in character. Indeed, they are commonly called 'ethical proprietaries.' For that matter, goods which are packaged for prescription sale and which bear trade-marks are proprietary in character when we consider that 'proprietary' connotes a claim to ownership or to some form of exclusiveness which frequently relates only to the trade-mark . . .

"The future of this industry must necessarily contemplate the competition of this growing business in non-advertised over-the-counter articles. And sometimes, as, for example, with vitamins and antihistamines, the proprietary industry by its advertising will accomplish for such competitive products public familiarity and a better market . . .

"With the passage of the Federal Food, Drug, and Cosmetic Act, secrecy as to formula was reduced to the quantitative phase. The common or usual name of the substance or, if it is composed of several substances, the active ingredients must be disclosed. So, while there may still be secrecy as to the quantities of ingredients, thee may no longer be secrecy as to the ingredients themselves.

"So, as we consider the future of the industry, we must assume that the laws pertaining to proprietary drugs will the more rather than the less expose their natures and their compositions as well as the indications and directions for use. Also, there will continue, in my opinion, a disposition on the part of the manufacturers, a demand by the regulatory agencies, and an expectation by the consumer, for increased information about the products, their compsitions, the purposes and directions for their use and precautions for their safety.

"One who, for a profit sells medicines and drugs to people who are sick, and who are the more credulous because they are sick, should assume a burden of extraordinary care in determining the truth of what he says and in stating it in clear terms that are not likely to mislead. He and not the public should assume the risk of his ignorance or mistake. As the industry holds to this precept, its future becomes the more secure.

"I am optimistic about the future of the proprietary industry. It is not seriously disputed that its economic place is justified. Its place, however, is not as broad as an advertising man's imagination."

New York Health Plan

THE HEALTH Insurance Plan, New York, now in operation for five years, added 31,690 new members in 1951, and added 140 private business organizations to its list of contractors. The officers of the plan declared at the fifth annual meeting of the board of directors that the experience of five years indicates that comprehensive medical care can be provided at a price the average man can afford to pay by using physicians in group practice.

As was the case in the report for 1950, 79 cents of every dollar received last year was used for medical services to insured members. Total enrollment will be about 340,000 by July, it is estimated. On December 31, 1951, the plan had a surplus of $1,896,244 for legal reserves and unanticipated contingencies.

Pfizer Expands Student Plan

CHAS. PFIZER & CO. has expanded its summer medical student plan to include undergraduates from selected pharmacy, dental, and veterinary schools all over the country. The pharmacy, dental, and veterinary students will work in teams with medical students in discussing antibiotic therapy with doctors, dentists, and veterinarians. With the exception of medical schools whose sophomore and junior students are not granted summer vacations, every accredited medical school in the country will be represented by two students. The accredited pharmacy schools selected will be represented by one member of the junior class, as will certain dental schools and veterinary colleges.

The program begins in late June when the selected students attend lectures on antibiotics given by members of Pfizer's medical staff at its plant in Brooklyn. Students from the Far West attend the week-long course in Los Angeles, California. When they complete this course, the students are formed into teams under the leadership of Pfizer professional service representatives and travel over the country contacting physicians, dentists, and veterinarians. They discuss antibiotics with doctors in private practice as well as with staff, residents, and interns in hospitals. The teams are provided with professional and scientific literature and with complimentary antibiotic supplies but they do not take any orders for these drugs.

The program ends in early September, and all students are paid $300 per month plus all traveling expenses, according to Donald C. Riley, director of the Pfizer student program. The program started last summer when 70 medical school students contacted doctors and were well received by medical men. The company feels that the experience gained in visiting practicing doctors is of great value to the future physicians, dentists, and pharmacists. In addition to acquiring important information about antibiotics, the students obtain first-hand information about hospital and medical practices in various parts of the country.

Sharp & Dohme Medical Research

IN DEDICATING the new $4 million Sharp & Dohme Medical Research Laboratories at West Point, Pa., the company played host to more than 1,000 scientists, doctors, business leaders, and press representatives on May 12. As part of the program a symposium on Frontiers of Research on Blood and Plasma Extenders was presented by a panel of six of the nation's leading scientists in this field of medicine.

Board Chairman John S. Zinsser declared that in 1930 the company had only three full-time scientists, while "today we have a staff of over 200 men and women, more than 70 per cent of whom are scientific personnel actively engaged in the search for new and improved products for the nation's health." He pointed out that in less than ten years the company's first laboratories, built specifically for research at Glenolden, Pa., were out-grown and research operations were scattered among 11 different buildings at that plant. The Glenolden laboratories, no longer in use, were opened in 1942.

"The new laboratories contain the most modern apparatus, instruments, and machines obtainable," said Mr. Zinsser, "But far more important, we believe we have an outstanding team of men and women scientists, and we are confident that they will continue the progress they have made in the past. Two of their significant accomplishments are the development of a large number of sulfa drugs in common use today, and the development of lyophilization technique for the processing of dried human blood plasma, which saved countless thousands of lives of wounded soldiers in World War II and is doing the same work in Korea.

Mr. Zinsser pointed out that Sharp & Dohme scientists have many other less dramatic achievements to their credit. "The fact that considerably more than half of our current sales are in new or improved products introduced in the last ten years—and our sales have tripled—is sufficient testimony to the kind of work they are doing."

Among Sharp & Dohme's modern research accomplishments are its leadership in the development of a large number of sulfa drugs now in common use (Sulfasuxidine, Sulfathalidine, Sulfamerazine, Sulfamethazine); its development of the lyophilization technique for the processing of dried human blood plasma; its contributions to the development of influenza virus vaccine; and its early entrance into the antibiotic field through the definitive work of company scientists with tyrothricin.

Latest developments of Sharp & Dohme research are Benemid, a new drug for the treatment of gout considered by many authorities to be the most effective known agent for this purpose; Cyclaine, a potent new

anesthetic; and Armine, a unique vasoconstrictor virtually devoid of side effects, common with this type of drug.

Fluoride Polishing Paste

WITH the ammoniated and penicillin dentifrices having passed their dramatic introductions, and with chlorophyll dentifrices now the center of attraction, Sterling Drug, Inc., through its subsidiary, Cook-Waite Laboratories, Inc., now throws into the fray "a new dental paste . . . which for the first time provides fluoride therapy and high-polishing action in a single preparation." Called Fluoride Polishing Paste, the product is available for professional use only, not being sold to the public. The paste combines sodium fluoride in a two per cent concentration with a special polishing agent consisting of microscopically-powdered aluminum hydroxide.

First treatment for children is recommended at the age of three years, to be resumed at the age of seven, ten, and again at the age of 13. This allows for early therapy of deciduous as well as permanent teeth. The paste should be applied to the teeth, one quadrant at a time, with a rubber polishing cup and all surfaces polished thoroughly. A coating of the paste should be left in contact for at least four minutes. Maximum therapeutic effect is obtained after four treatments of four minutes each.

F.T.C. Bans Forhan's Claims

AN ORDER against advertising of Forhan's Tooth Paste has been issued by the Federal Trade Commission. In addition to Zonite Products Corporation, the manufacturer, Erwin, Wasey & Co., the advertising agency, is also included in the order. Under the terms of the order the following claims are prohibited:

Massaging the gums with Forhan's Tooth Paste is of any value in making them firmer or in prevention of gingivitis or pyorrhea; massaging the gums or brushing the teeth with the preparation is of any value in the treatment of gingivitis; brushing the teeth with the product is of any value in preventing gingivitis or pyorrhea other than to the extent that locally caused gingivitis may be prevented by keeping the teeth clean; the results obtained by using competing tooth pastes are inferior.

The preparation, according to the Commission, "contains nothing the application of which is of therapeutic value in the prevention or cure of any disease or disorder of the teeth or gums. Its sole value is as a cleaning agent."

The term "massage," as used by dentists, according to the Commission, "means a careful stroking or squeezing pressure applied to the gums in a particular area to achieve a specific purpose. Its proper use requires professional instruction. The testimony of the expert witnesses is conflicting as to the value of massaging the gums even with professional instruction. However, the preponderant weight of the qualified dental opinion is that massaging the gums in the sense of indiscriminately rubbing them is of no value and, in some cases, is actually harmful to the gums."

Scovill's 150th Year

THE Scovill Manufacturing Company of Waterbury, Connecticut, is celebrating its 150th year. As long ago as 1894, Scovill sold the first metal cosmetic container ever produced in this country to a St. Louis manufacturer of "complexion powder." This first Scovill cosmetic container customer was so pleased with the result that he labeled it "The Scovill Gold Puff Box." From that time on the company has continually added an enviable list of new "firsts" in the cosmetic industry.

Scovill made the first metal lipstick holders in 1915 and the first containers for powder in cake form. In 1919, Scovill invented the first propel lipstick holder and, in 1923, the first propel-repel lipstick with a hinged cap. A few years later, inspired by the roll-top desk in a Scovill salesman's Waterbury office, the company brought out the famous lipstick that could be operated with one hand—pushing up a knob with the thumb raised the lipstick and rolled back the cap at the same time.

These are a few of the many contributions Scovill has made to the drug and cosmetic industry. Such things as the development of new protective lacquers and new machine-applied decorations have combined with Scovill metal fabrication know-how to produce cosmetic containers with all the qualities of fine jewelry-store offerings at prices appropriate for the average purse.

Products of the division, however, are by no means confined to lipstick holders and compacts. Drug products, made for other manufacturers, include a diversity of items including blood transfusion equipment, hypodermics, anesthesia containers, and dental mirrors.

Starting out as a small New England button-making shop, the company now employs over 10,000 people and serves every corner of American industry.

Brass and other copper-base alloys are an important part of Scovill's business, much of this metal going to other fabricators. Much of the metal is also used by Scovill for the making of products ranging from safety pins turned out by the Oakville Division to tire valves, gauges, and deep-sea diving equipment made by the A. Schrader's Son Division, or to vacuum cleaners, food mixers, and other electrical appliances carrying the well-known brand name of Hamilton Beach Company Division. From Waterville come brass valves and fittings for the plumbing trade. Scoville lawn sprinklers and garden hose serve the American home. And metal buttons and zippers are supplied to the garment industry. Another Scovill product is the Gripper Snap Fastener.

Remington Medal to Costello

PATRICK HENRY COSTELLO, of Chicago, secretary of the National Association of Boards of Pharmacy and secretary of the American Council on Pharmaceutical Education, has been named as the recipient of the 1952 Remington Medal Award.

In citing their reasons for the selection of Mr. Costello the jury of award called attention to his outstanding service to the profession in the development of the

National Association of Boards of Pharmacy's program of reciprocal licensure for pharmacists and his notable contributions to the program of accreditation of colleges of pharmacy by the American Council on pharmaceutical Education. For the past three years Mr. Costello has been responsible for the administration of the inspection system devised by the Council for colleges of pharmacy, as a basis for their classification under the accreditation policy.

According to custom, the medal will be presented at a dinner meeting of the New York Branch of the A.Ph.A. in December.

A program to provide scholarship funds $1,000 each for the 72 accredited medical schools in the country has been established by Chas. Pfizer & Co. The money will be given directly to the schools in each case with the stipulation that not more than three students benefit from the thousand dollar fund. The scholarship students are to be chosen by the deans of the medical schools from the first and second year classes on the basis of scholastic ability and financial need. The money will be used to help students defray costs of tuition, books, and living expenses.

Vitamin Research Grants

NINE new grants for research on vitamins and nutrition amounting to more than $39,000, becoming effective July 1, have been announced. Included in the projects is a study in Italy of the effect of vitamin B_{12} on growth of undersized children on low protein diets; a study at Harvard of the influence of nutritional factors on the metabolism of alcohol; and an investigation of the metabolism of vitamin A being carried on at the University of Illinois.

The complete list of the grants follows:

Drs. L. D. Greenberg and J. F. Rinehart, University of California Medical School, $7,500 for study of fundamental biochemical and morphologic pathology of B-vitamin deficiencies in the rhesus monkey.

Dr. Karl E. Mason, University of Rochester School of Medicine and Dentistry, $1,200 for continuation of studies of distribution of tocopherols in human tissues.

Dr. Robert E. Olson, University of Pittsburgh School of Medicine, $6,800 for study of the interrelationship of thiamine, pantothenic acid and insulin in the metabolism of carbohydrate.

Dr. Albert E. Sobel, Jewish Hospital of Brooklyn, $2,400 for continuation of studies on estimation of vitamin D in blood and problems of vitamin D absorption and transfer.

Drs. D. M. Hegsted, M. F. Trulson, and F. J. Stare, Harvard University School of Public Health, $7,950 for study of influence of nutritional factors on metabolism of alcohol.

Dr. David R. Weir, Western Reserve University School of Medicine, $6,840 for continuation of studies on the role of pantothenic acid and pyridoxine in leucocyte formation in normal and pathologic conditons of hyman beings and mice.

Dr. George Wolf, University of Illinois, $2,272.50 for study of metabolism of vitamin A.

Drs. Robert M. Kark and G. S. Fraenkel, University of Illinois College of Medicine, $3,600 for study of carnitine (vitamin BT) levels in the blood, urine and skeletal muscle of healthy individuals and in patients suffering with nutritional disease.

Dr. Roberto A. Funaro, Nutrition Clinics Fund, New York, $900 for completion of a study in Italy on the effect of vitamin B_{12} on growth of undersized children on low protein diets.

Now 28 Oldest Drug Houses

STILL another drug manufacturer eligible for our list of Oldest Drug Houses has come to our attention. This one is Lloyd Brothers, Pharmacists, Inc., of Cincinnati. "Lloyd Brothers, Inc. was founded by John Uri Lloyd and began operation as such in 1870," we are informed by Robert H. Woodward of the company. Therefore Lloyd Brothers takes the place in the list—which now numbers twenty-eight—immediately after Parke, Davis & Company, and immediately ahead of Henry K. Wampole & Co.

As we have explained before, it starts with the first known house, and ends abitrarily with Eli Lilly & Company, because Lilly was last on the original list of eight manufacturers taken from the Reed & Carnrick Quarterly, from which this all started.

The twenty eight Oldest Drug Houses are:

Caswell-Massey Co. Ltd.	1752
Schieffelin & Company	1781
The Tilden Company	1824
S.S.S. Company	1826
The Wm. S. Merrell Company	1828
McKesson & Robbins	1833
Strong Cobb & Co.	1833
Boericke & Tafel	1835
Otis Clapp & Son	1840
Smith, Kline & French	1841
Carroll Dunham Smith Pharmacal Co.	1844
Sharp & Dohme	1845
Solon Palmer	1847
Chicago Pharmacal Company	1855
Hance Bros. & White Co.	1855
William R. Warner & Co.	1856
E. R. Squibb & Sons	1858
Reed & Carnrick	1860
Wyeth, Inc.	1860
The Burroughs Bros. Mfg. Co.	1863
Buffington's	1865
Parke, Davis & Company	1866
Lloyd Brothers, Inc.	1870
Henry K. Wampole & Co.	1872
Chilcott Laboratories	1875
Lydia E. Pinkham Medicine Company	1875
The Arlington Chemical Company	1876
Eli Lilly & Company	1876

Synthetic Vitamin A in Oleo

THE Food and Drug Administration, by publication in the Federal Register of May 21, has permitted the use of synthetic vitamin A in oleo margarine. The requirement for vitamin A in margarine is 15,000 units per pound. This will mean a big boost in outlet for the makers of synthetic vitamin A, and it will mean much keener competition for the sellers of the natural vitamin A from liver oils. Synthetic vitamin A is today

realistically priced for this and other markets, selling at 15 cents per million units, compared with 60 cents per million units two years ago.

Brushing the Teeth

"STRICT oral cleanliness is the most effective protective measure against periodontal (gum) disease," says Dr. Dorothy H. Gard, School of Dentistry, University of Michigan in the Journal of the American Dental Association. "When the teeth are kept continuously clean, and function is maintained within physiologic limits, the gingival tissues (surrounding the teeth) are usually firm and resistant."

Emphasizing the importance of proper toothbrushing, Dr. Hard says the patient should watch each stroke in a mirror.

"Most people brush their teeth in front of a mirror, but unless they are told to look at their teeth and gums as they brush them, they incline their heads forward and look in the wash bowl," she says. "They depend on feeling rather than sight. The operation can only be performed successfully if the patient's eyes are open and he watches what he is doing. Those who wear glasses for reading should put them on when they brush their teeth.

"The average citizen brushes his teeth rapidly just before his morning coffee. At noon, he has no brush to use after his lunch, and at night he gives his teeth a few perfunctory strokes."

Dentifrices have no therapeutic value, says Dr. Hard, but she adds:

"If a flavored dentifrice makes toothbrushing more acceptable, it should be used. Soap and mild abrasives are helpful in removing dirt from the hands. They are also useful in removing debris from the teeth."

Mouthwashes, like dentifrices, have little, if any, therapeutic effect, claims Dr. Hard, who adds:

"The mouth should be rinsed after brushing the teeth to flush out the remaining debris, and the least expensive and most available wash is water."

Ethical Drug Sales

"THE sales in the ethical drug industry at the manufacturer's selling price will amount to approximately $1 billion $175 million in 1952," Stuart V. Smith, vice-president in charge of sales of Wyeth, Inc., told the Pharmaceutical Conference held by Rutgers University, May 14. "This figure can be broken down into three basic groups," said Mr. Smith.

"The first group—oral prescription preparations—accounts for approximately $625 million, of which $400 million is sold through the retail drug outlets, $150 million through hospitals, and $75 million to dispensing physicians. This oral prescription figure represents slightly less than 50 per cent of the total ethical drug sales.

"The second group consists of ethical drug specialties recommended by the doctor and purchased only through retail drug outlets, and this totals approximately $400 million, about equally divided between hospitals and institutions, and parenteral preparations bought by the physician for his use in his office.

"Available data indicates that prescription volume for 1952 will be approximately $800 million, which indicates a profit of over $400 million in prescriptions by the retail pharmacists of the United States. In addition to that, consideration must be given to the second group—$150 million worth of ethical drug specialties recommended by the physician and sold through retail pharmacies. If we follow the usual pattern and assume a 33⅓ per cent profit on the selling price, this volume at retail should amount to $225 million. When one gives consideration to these figures, it becomes very obvious that the practicing physician plays a tremendously important role to the manufacturer—to the wholesaler—and to the retail druggist."

Now It's Isoniazid

ISONIAZID is the international non-proprietary name selected for the new tuberculosis drug, isonicotinic acid hydrazide. This name was selected by the Subcommittee on International Non-proprietary Names of the World Health Organization Expert Committee on the International Pharmacopoeia.

French Advertising Banned

AN F.T.C. hearing examiner's initial decision against George Alstadter, trading as Argentum Laboratories, Philadelphia, bans the claim that his perfumes and toilet waters are compounded in France. To be discontinued are use of the words "Greetings from Paris" or the picture of the Eiffel Tower or any picturization indicative of France in advertising products not compounded in that country. Unqualified use of brand names indicating French origin would also be prohibited. When using French names for his preparations, he must clearly and conspicuously state in immediate connection with the names that the products are compounded in this country.

TB Drugs Released

THE Food & Drug Administration has released the new anti-tuberculosis drugs to the medical profession "for use under close medical supervision." In this action, taken June 4, the FDA recommends that use of these drugs be limited to treatment of patients not responding satisfactorily to streptomycin therapy, and the label on manufacturers' packages must bear the statement: "For use in the treatment of streptomycin-resistant tuberculosis under close supervision of a physician." While the statement says that the drugs have been used effectively in some cases of military tuberculosis and tubercule meningitis, which are frequently fatal, it contained the following caution:

"There is growing concern about the possible effects of promiscuous and indiscriminate use. There have also been reports of resistant strains of tubercule bacilli after varying periods of treatment. For this reason the FDA medical men feel that the drug should be used in selected cases where it may be a life-prolonging or life-saving measure."

Manufacturers, who have been accumulating stocks of the drugs in anticipation of FDA release, immediately made air shipments so that the drugs would be promptly available throughout the country and abroad.

by Thomas Cifelli, Jr.
PATENT ATTORNEY*
NEWARK, N. J.

Anti-T.B. Drug Patented

WHAT may well prove to be an historic document was issued by the U.S. Patent Office to Dr. Herman Herbert Fox on May 6, 1952. The paper referred to is U.S. Patent No. 2,596,069, assigned to Hoffmann-La Roche Inc., Roche Park, Nutley, N. J., and covering anti-T.B. drugs.

Probably most readers recall the startling revelations in the press last winter concerning the new anti-T.B drugs. Certainly, any one who saw the pictures of patients whom these drugs placed on the road to recovery from the dread tuberculosis will never forget the experience.

Already, it appears that at least four chemical companies, Hoffmann-La Roche, E. R. Squibb & Sons, Schering and Chas. Pfizer appear to be ready to manufacture and sell the drugs, which one expert says should involve a sales potential of $70,000,000 a year, not to mention the untold good to mankind that the drugs already disclosed or which later will be developed will accomplish, assuming that some of their early promise is realized in fact.

The patent history of U.S. 2,596,069 is somewhat startling in itself, entirely aside from the subject matter. For, the application which matured into the patent was filed on March 7, 1952 and was actually involved in an Interference with another patent claimant (E. R. Squibb). Indeed, a record for quick prosecution may have been set by this patent. It is true, however, that there was an earlier-filed co-pending application which was the forerunner of U.S. 2,596,069 but even this forerunner was filed on March 7, 1951, meaning that it actually took only a total of 14 months to obtain the patent counting from the filing date of the parent case. The startling brief patent history is all the more surprising when one recalls that in general the broader and more pioneering an invention, the longer it takes to obtain a patent.

Let us take a look at the patent itself.

The active ingredient in the anti-T.B. drug is isonicotinic acid hydrazide or an acid addition salt thereof, such as the hydrochloride. The nature of the drug, i.e. its chemical structure, is another noteworthy point as many people had begun to think that the place to look for new therapeutic materials was the backyard rather than the chemical laboratory, antibiotics having met with phenomenal success in recent years.

Tuberculosis

Dr. Fox points out in his patent that tuberculosis has long been a killer, usually requiring a protracted course of treatment before death or recovery. Further,

it is pointed out that T.B. is one of the most important causes of chronic ill health. The disease is caused by the tubercle bacillus (Mycobaterium tuberculosis). Tuberculosis in human beings is usually caused either by the human strain or the bovine strain of the bacillus, which is very resistant. Because of this resistance, dried sputum retains its infectiousness over long periods, thereby spreading the disease. The disease is usually acquired either by the inhalation of droplets of infected sputum, either fresh or dried, or from milk from tuberculous cows, Dr. Fox points out.

Prior T.B. Treatments

Until Dr. Waksman's streptomycin was discovered it was impossible to attack the tubercle bacillus directly, the patent notes. Long, drawn-out treatment was required, the treatment being based on rest, nutrition, fresh air, good nursing and collapse therapy.

Streptomycin ushered in a new era in the treatment of tuberculosis, it being the first drug that could inhibit the bacillus in both animal and human bodies. The theory is that streptomycin acts by inhibiting multiplication of the bacillus, in this way helping the recuperative powers of the body to dispose of the disease.

Good as it was, streptomycin was found to have a number of significant disadvantages:

(1) The patients do not always tolerate it well;
(2) It may cause temporary or permanent deafness;
(3) It causes dizziness and vertigo;
(4) It has to be given by injection; and
(5) The bacillus may learn to live with the drug, i.e., a resistant strain of bacillus is developed, and streptomycin loses its therapeutic value as a result.

Thus, if a person is infected by the sputum of a T.B. patient harboring the streptomycin-resistant bacilli, the person so infected will not respond to streptomycin treatment.

To overcome the tendency of the bacilli to develop resistance against streptomycin, para-amino-salicylic acid has been used along with streptomycin. It has been found that PAS does help streptomycin, delaying the appearance of resistant strains of the bacillus. However, PAS may cause severe and prolonged diarrhea and patients sometimes develop resistance to the combination. Furthermore, some serious side reactions of this combination have been noted.

The nearest chemically-related compounds to isonicotonic acid hydrazide previously tried were nicotinamide and its derivatives. However, these materials are highly toxic and reportedly only function as a vitamin.

Forms of the Patented Anti-T.B. Drug Composition

The anti-T.B. drug, according to Dr. Fox, may be associated with a carrier which may be either a soluble material or a sterile parenteral liquid. The compositions may take the form of tablets, powders, capsules or other dosage forms which are particularly useful for oral ingestion. For parenteral use liquid diluents are employed in sterile condition. Water is apparently the preferred solvent. The active material may be admixed with solid diluents and/or tableting adjuvants such as cornstarch, lactose, talc, stearic acid, magnesium stearate, gums, or the like. In this connection any of the tableting materials used in normal pharmaceutical practice can be employed, provided there is no incompatibility with the isonicotinic acid hydrazide. Alternatively, the hydrazide material and adjuvant may be placed in the usual capsules or put in the form of powder packets or a suspension in a material in which the hydrazide is not soluble. In other words, the anti-T.B. drug seemingly and fortunately can be employed in just about any form known to the apothecary.

Chemical Forms of the Anti-T.B. Drug

The isonicotinic acid hydrazide itself may be used in various chemical forms. Thus it may be employed as such or in the form of acid addition salts of which the hydrochloride is said to be illustrative.

Anti-T.B. Drug not a New Chemical Compound

As often happens these days, important inventions involving chemicals reside in the finding of new uses for already-known materials and not, as perhaps some might suppose, in developing new chemicals not previously known. Such is the case here for isonicotinic acid hydrazide has been known as a chemical for forty years, two Germans Meyer and Malley, having reported its preparation in *Monatshefte* Volume 33, page 400. However, no one prior to Dr. Fox had ever investigated any of its physiological properties or applied it for any therapeutic purposes. In other words, the compound was apparently merely a laboratory curiosity, if indeed it was even that.

Activity of Isonicotinic Acid Hydrazide in Animals

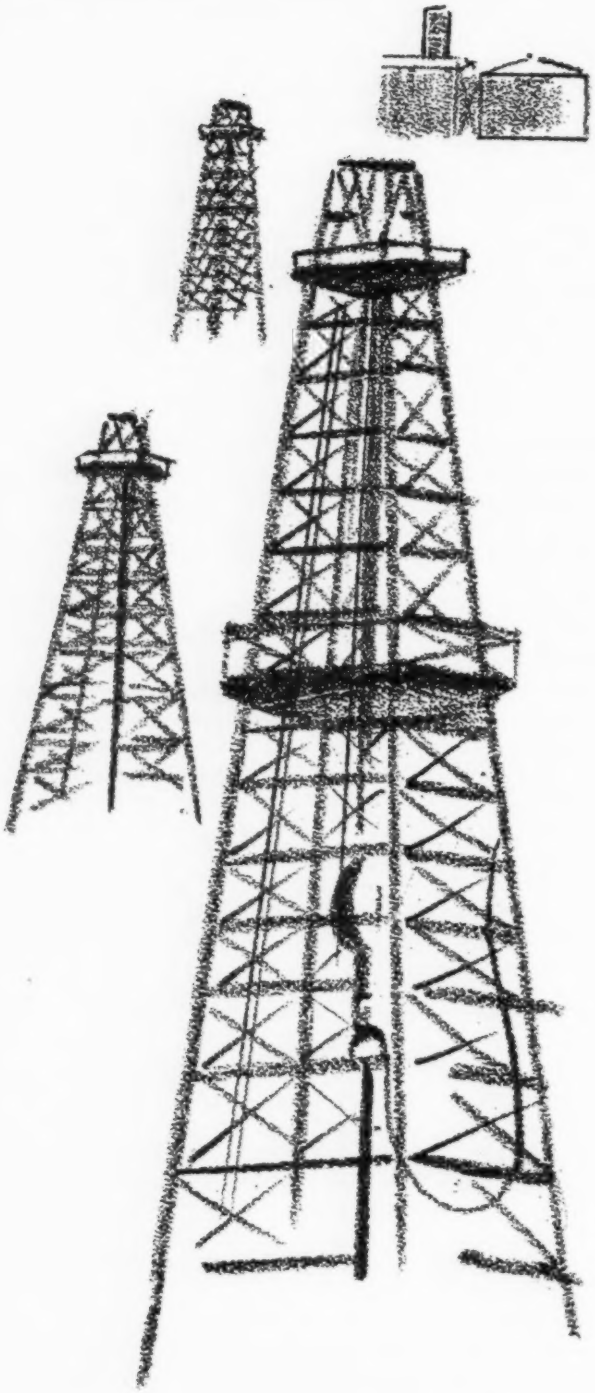
The hydrazide is said to be highly active against tuberculosis, in vivo as well as in vitro. Tests on mice indicated that isonicotinic acid hydrazide in amounts as little as 0.0017 per cent of the total diet prevented tuberculosis lesions in the animals. In vitro tests show that the drug inhibited the growth of tubercle bacilli in concentrations of less than one part per million.

An indication of the anti-tuberculous efficacy of the drug upon animals is shown in the following example which is one of several mentioned in the patent:

One gram of isonicotinic acid hydrazide was ground to a fine powder and was then mixed with 25 grams of a commercially available mouse diet known as the Rockland Mouse Diet, which is sold by Arcady Farms Milling Company, Chicago, Illinois. The resulting mixture was then slowly added to 974 grams of ground Rockland Mouse Diet and thoroughly mixed so that a final concentration of 1:1000 of isonicotinic acid hydrazide to the diet was obtained. In an identical manner a diet containing a concentration of 1:1000 of isonicotinic acid hydrazide to a commercial diet known as Borden's Dog Food was prepared.

The antituberculous activity of each of the diets medicated with isonicotinic acid hydrazide as described

(*Continued on page 813*)



by Frank Child III

The Alcohol Story

WHILE last month's 17½ cent price break in industrial alcohol was not expected at that precise moment, still it was no great surprise to the industry. Nor was it the result of any one factor, but the culmination of a series of events which had been building up throughout the past twelve months. No further changes are anticipated, say the authorities, because the market is now established at a realistic level.

This sudden break was a severe jolt to the molasses producers in Cuba, however, and has thrown that industry into a turmoil, which at the time of writing, was still very much unsettled. The entire chain of events, if nothing else, has emphasized the increasing importance of petroleum as a source of alcohol and poses some interesting questions which may be answered in the next five or ten years.

In January, 1951, there were about 55 million gallons of ethyl alcohol on hand, and by August, the total stockpile topped 105 million gallons. Thereafter, the figure ranged from that high point down to about 90 million gallons, but no lower. Private industry was at that time becoming very inventory conscious and had greatly reduced its purchasing habits, as contrasted to the summer months of 1950 when, just following the outbreak of the Korean War, it grabbed up all the available stocks. The U.S. government, moreover, curtailed its synthetic rubber program in early 1952, thereby reducing its need for butadiene, and for ethyl alcohol, from which it is derived. To add to the situation, 43-cent isopropyl alcohol was being used in many applications not controlled by U.S.P. regulations, in competition with the ethanol. With the consumption of alcohol thus reduced measurably, the available supply of the commodity was maintained at an abnormally high level, which by April, 1952, had brought about a sluggish market.

The first suggestion of a break in the alcohol market occurred in January, 1952, when fermentation alcohol was reduced from 90 cents to 75 cents. Carbide and Carbon Chemicals Company at that time was using its own synthetic alcohol in the preparation of derivatives, and was simultaneously buying fermentation alcohol from outside sources which it resold to the open market in order to keep the trade channels open.

Shell Chemical Corp. had been very quietly selling its synthetic alcohol for more than a year at the steady price of 55 cents a gallon. This had created no excitement because Shell was selling on contract only and was not handling enough to upset the market, or to compete with the higher-priced molasses alcohol.

But all this time, the market was slowly building up to the May, 1952, price drop. There are two versions of what happened at that time. Carbide reports that for several years it has been working on new synthetic alcohol facilities, and improving others. As soon as their production reached the point where there was more than enough alcohol to produce all the necessary derivative compounds, the company decided to sell the excess on the open market. That point arrived in May.

The other version has it that Carbide earlier this year had to cut down on the production of some of the derivatives, such as acetaldehyde for the textile industry, because of a smaller demand. But the company's alcohol production continued at a steady rate, and the stocks therefore piled up to the straining point, taxing the storage facilities. To relieve the pressure, the company poured the synthetic alcohol, priced as it had been for some time at 57½ cents, on the open market.

Whichever explanation is correct, the result was the same. Carbide's action in itself did not cause the price break, but proved to be one more irritating factor whose added weight knocked the weakened structure of the alcohol market asunder. Fermentation producers, dramatically left out on a limb, were suddenly confronted with the imposing competition from an overwhelming synthetic alcohol source. They had to reduce the molasses alcohol price to 57½ cents in order to stay in business, and thereby closed the gap which has long existed between that and the synthetic alcohol.

Even though this occurred during a time when most of the country's oil refineries were strike-bound and had closed down their operations in synthetic alcohol production, this emergency had little bearing on the situation. In some strike-free areas production was continued on a normal scale. Authorities indicated there was little chance of an alcohol shortage, for stocks on hand at that time were thought sufficient to meet all contingencies for six weeks.

But this price reduction on the part of the fermentation alcohol producers opened up new troubles for the Cuba molasses industry. Up to, and including the present time, the Cubans have been doggedly standing by their figure of 20 cents a gallon for their blackstrap, and have refused to listen to the 10- or 12-cent offers emanating from the U.S. With the fermentation alcohol price now down to 57½ cents a gallon, the Cuban Sugar Institute, the lone molasses exporter, will have to meet that figure in order to stay in the alcohol business.

It takes 2½ gallons of molasses to produce one gallon of alcohol. Based on a 12-cent per gallon price, 2½ gallons of molasses would cost 30 cents. Add to this 8¾ cents for freight cost (3½ cents a gallon), and 15 cents per gallon of alcohol for conversion of the molasses. This totals 53¾ cents for the cost of production of one gallon of alcohol. With the synthetic selling for as low as 55 cents, this does not leave very much margin.

Whatever motive the Cubans may have for delaying, whether they are banking on a prolonged state of war, in which case the demand of alcohol would soar, or whether they believe they can win the price battle by holding off for a long time, it seems right now that they are in for a serious jolt.

The 1952 sugar cane crop in Cuba was inferior and lower than normal in sugar content (about 52 per cent). When this occurs, the molasses yield is always above normal. This year Cuba realized a molasses production of from 300 million to 350 million gallons, one of the largest yields the island has ever had. To make matters worse, the Cubans are expecting another crop of sugar cane in December. Unless they succumb to the economic pressure now being applied and reduce the molasses price, they will have so much blackstrap by the year's end that they'll be forced to sell it at a dreadful loss.

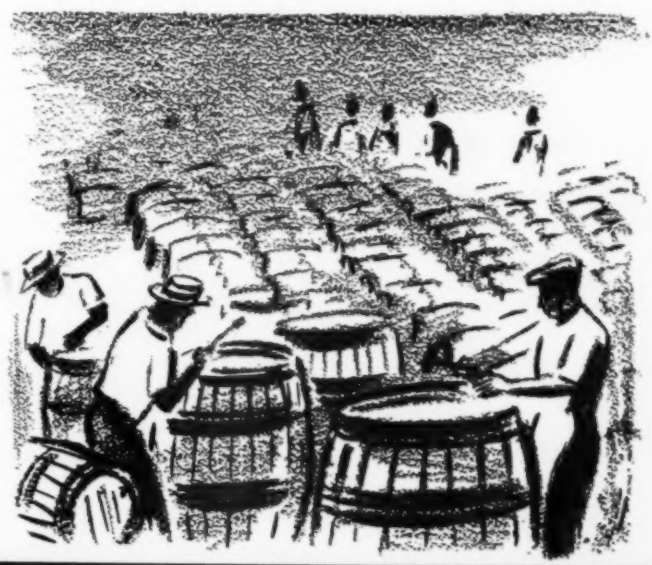
If the Cuban Sugar Institute intends to wage a battle of attrition, it appears almost certain to lose. The normal synthetic alcohol production capacity of the United States at the present time, coupled with the stocks on hand, are sufficient to take care of domestic needs for quite some time. A spokesman for one of the synthetic alcohol producers, in fact, has stated that if molasses becomes increasingly difficult to obtain from year to year, and if the alcohol industry remains alert by building additional plants as they are needed, in a minimum of five years, the industry could very well produce annually enough alcohol to meet every need in the United States. The molasses might then be diverted to the feed industry on a much greater scale than it is today.

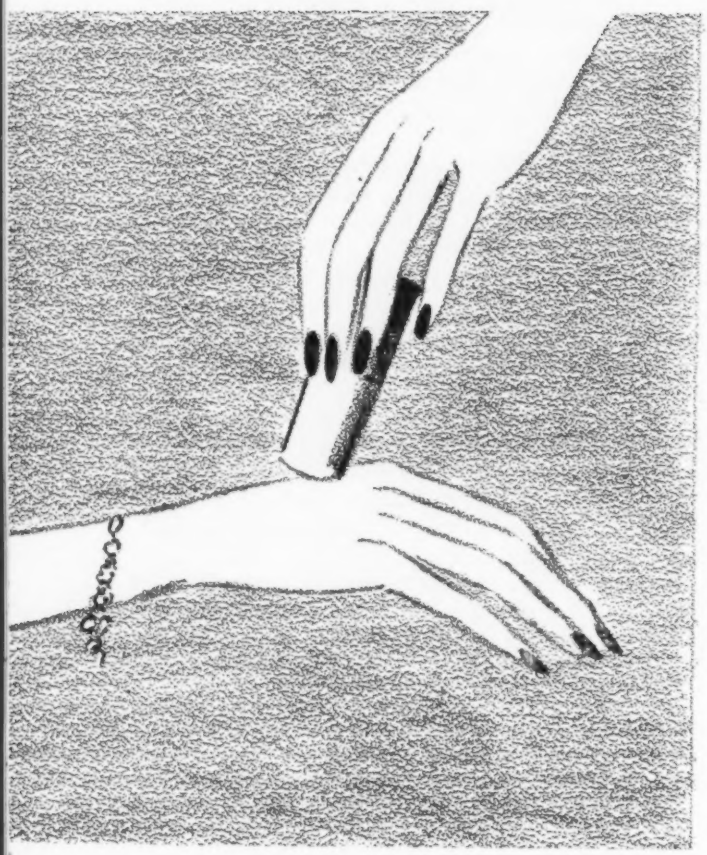
This is no mere statement, for the handwriting is already on the wall, with the synthetic alcohol having caught up with and surpassed the fermentation product during the last ten years. In 1941, for example, of the 157 million gallons of alcohol produced, 70.4 per cent was derived from molasses, 23.4 per cent from ethyl sulfate, 5.9 per cent from grain, and 0.3 per cent from other materials. Synthetic alcohol got its start during the war when molasses was difficult to obtain. Now, petroleum accounts for over half of the alcohol produced, as indicated in the following table.

	1950		1951	
	Per Cent	Gals. (Millions)	Per Cent	Gals. (Millions)
Molasses	34	65.92	23	50.83
Petroleum	64	123.52	52	114.92
Grain	0.81	1.56	24	53.04
Others	1.19	2.30	1	2.21
Total		193.00		221.00

Of course, it is highly improbable that petroleum will ever entirely supplant molasses as an alcohol source.

(Continued on page 837)





Hand Cream Sticks

by Harry Hilfer

ONE of the direct results of the great success of the solid cologne sticks has been the appearance of other cosmetic items in a somewhat similar form. Among these newcomers have been the solidified hand creams which attempt to incorporate the function of the hand cream into this new solidified form. The appearance of this new product has excited a great deal of interest though its appearance has been too recent to allow for any long range prognostications as to how acceptable it would be to the consumer.

If the usual hand cream is considered from a functional standpoint, we find that it is essentially designed as a protective film for the hands with some components added to further increase its emolliency and its aesthetic properties. The substances used to introduce these effects are stearic acid and glycerol primarily plus a relatively small amount of a soap—either potassium. ammonium or triethanolamine to form the emulsion, Secondary effects are provided by the incorporation of lanolin, glyceryl monostearate or other hydrophylic esters and perhaps fixed oils, depending on the sought-after effects. It seems reasonable to suppose that the cream sticks should be reformulated so that these same substances may be incorporated.

The simplest approach would be to use a sodium soap instead of a soft soap and to proceed from this point

onwards. By increasing the amount of the soap over the usual concentration of the hand cream and lowering the concentration of glycerine such a product could easily be made. The increase in the soap concentration need not be regarded as deleterious, since the actual solubility of the sodium soap is so much lower than is the potassium or other soaps that there need not be any greater potentiality towards irritation expected. Indeed, the lower solubility of the sodium soap would probably increase the resistance of the film against water to a greater degree.

There are, however, several bad features inherent in this method of formulation. Sodium hydroxide is capable of reacting with approximately 1.4 times as much fatty acid as is potassium hydroxide. The ratio of soap to excess fatty acid would therefore be affected and the "feel" of the film would be affected as well. Obviously compensations would have to be made in the formulation to offset the difficulties so produced. Increasing the amount of fatty acids used is not the whole answer since this would have too great an effect on the amount of water included in the product and therefore capable of evaporating from the applied film. If the non-volatile agencies are present in greater concentrations the film may feel "tackier" or greasier than it does in a hand cream. If possible it would appear preferable to use another agency to replace the excess fatty acid. Since the sodium soap would produce a harder film to begin with, a substance of lower melting point such as a monoglyceride might be better.

A system as has just been described lends itself to a good deal of versatility. The hardness of the final preparation, and therefore its ability to deposit a film of desired thickness, can be controlled by the amount of the sodium soap introduced, and, in addition, it has the added advantage of being able to deposit a thinner or thicker film with an increase or decrease in the amount of pressure applied—which is a function of most thixotropic systems. It enjoys the further advantage of not having a sharp pour point and therefore being capable of retaining its application characteristics over a wide temperature range.

Another method of producing such a product would be by the introduction of a common ion in sufficient concentration to force most of the dissolved soap out of solution into a colloidal phase which would stiffen the cream to the desired consistency. This procedure has the advantage of keeping the formulation closer to the original cream formulation than is otherwise possible. It is only practicable, however, with potassium soaps and would not work successfully with either ammonium or triethanolamine soaps. A further difficulty would lie in the narrow range within which the concentration of the common ion would function as a means towards production of the colloid phase rather than precipitating the soap completely and therefore destroying the emulsion. It is possible, however, that the use of the common ion in conjunction with the sodium soap would produce the answer.

The methods described are based upon the introduction of less soluble soaps than are ordinarily used as gelation agencies in the manufacture of a firm stick. This same method may be applied to the synthetic detergents if their use as emulsifiers are desirable. Sodium stearyl sulfate for example would behave in similar fashion and its properties in this direction may be further enhanced by the introduction of some potassium ions which would produce a less soluble emulsifier than is the sodium salt—this is, of course, in direct opposition to the usual soap behavior. There is a good possibility that a system using sodium stearyl sulfate and a potassium soap would give a desirable effect—since the tendency would be to cause a decrease in the solubility of both agencies. These are mentioned merely as possible directions toward which development work of this type could be carried.

The methods of manufacture of creams of this sort are much the same as in creams except that higher temperatures must necessarily be employed, because of the lower solubility of the soaps used. If glycerides or other esters are employed in the formulations it would be safer to add them after the initial saponification, that is, after the reaction between the fatty acid and the alkali has taken place. The cooling down period is of shorter duration and the cream should be poured into molds at a point in the process after emulsification takes place but before the cream has thickened. The exact temperature would be dependent on the formulation used and can be determined only after some trial and error experiments. The "setting up" period in the molds is somewhat greater than it would be for lipsticks or even solid colognes, since there is a lag between the temperature and the thixotropic hardening.

The same precautions used in the solid colognes should be exercised with the solid creams—since the water is also capable of evaporation though not to as great an extent.

This type of cream has some merit in the convenience with which it can be applied. Variations of this type of preparation could be made to include sun-screening agencies and perhaps insect repellents, since in both cases a thin easily applied and relatively non-greasy film are desirable. Certainly in a period where novel approaches seem to be desirable a drift in the direction indicated may be the forerunner of a new field in cosmetics.

There should be one word of caution included and that is the fact that these systems are highly complex physical and colloidal entities—and not too well understood since all the natural laws governing them have not as yet been formulated. Developments must, therefore, be made cautiously and proper shelf-life determinations made. Introduction of a new material cannot be expected to have any predictable effect on the final outcome, necessarily, and the final effects must be evaluated.

Davis Factor, chairman of the board of Max Factor & Co., elected president of the Toilet Goods Association.

Other officers elected are: Vice-presidents: Jean Despres, Coty (reelected), John A. Ewald, Avon Products (reelected), H. J. Lehman, Wildroot Company (reelected), and C. T. Lipscomb Jr. Directors elected are: J. G. Bell, Bonne Bell; Harry Haus, George W. Luft Company; John Hudson Moore, John Hudson Moore, Inc. Directors elected to represent associate members are: Peter L. Forsman, of C. H. Forsman Company and M. Lemmermeyer of Aromatic Products. Reelected as directors are: R. B. Brown, Bristol-Myers Company; C. W. Godefroy, C. W. Godefroy Manufacturing Company; Lessing L. Kole, Kolmar Laboratories; and Martin Revson, Revlon Products Corporation. Philip C. Smith of Yardley was reelected treasurer, and William F. Denny, Jr. of Frances Denny was reelected secretary.
Dr. Donald H. Powers of Warner-Hudnut, Inc., is the new chairman of the scientific section of the association, and Dr. Sophie Plechner is vice-chairman.

T. G. A. Meeting

"I DO NOT recall a time in the history of our industry when both manufacturers and distributors were faced with so many difficult and pressing problems," executive vice-president Stephen L. Mayham told the 17th annual meeting of the Toilet Goods Association, held at the Waldorf-Astoria Hotel, New York, May 12-14.

"We have a practical demise of fair trade . . . we are also faced with the threat of more vigorous enforcement of the Robinson-Patman Act as a result of the issuance by the Federal Trade Commission of trade practice rules for the cosmetic industry. Then we have the investigation of the use of chemicals in cosmetics by the so-called Delaney Committee. We also have a probable continuance of price controls and almost certain continuation of wage and salary controls. Fortunately, unless the emergency situation becomes far worse than it appears at the moment, most of our raw materials and supplies are readily available and shortages of any at this time do not seem to be acute. Undoubtedly, however, Congress will continue the authority of the N. P. A. to allocate and regulate supplies of almost all industrial materials. So, while at the moment we are in a good position with respect to our materials, that situation can change and change very abruptly.

"The fate of the bills now before Congress to replace the shattered Miller-Tydings Act is a matter of very great interest. It appears unlikely at the moment that the present Congress will complete enactment of any of these measures and should any of them be passed by both House and Senate, there is a strong possibility of a Presidential veto which no one believes could be overridden. It is indeed unfortunate from the standpoint of those who favor Fair Trade that the proponents of the several measures which were introduced in Congress spent so much time fighting each other to the great confusion of everyone and especially

Jack S. Weidhopf, president of Parfums Ciro, accepts from H. Gregory Thomas, president of Chanel, Inc., the 1952 Charles S. Welch Memorial Award for packages retailing over $1.00. The award given for the packaging of Ciro's Quintet, a purse-size container with five sample bottles of Ciro Scents. Mr. Thomas (left) is chairman of the award committee.

of those Congressmen who are members of committees handling this legislation. Had they gotten together and composed their temperamental difficulties it is quite possible that a bill could have gotten through in time for complete action by the Senate and possibly by the President. On the other hand, opponents of Fair Trade feel that this display of temperament was a very good thing in the long run. Thus far, except for sporadic outbursts of price cutting, there have been very few unfavorable results from the Supreme Court decision in our industry. If, however, business should slump off there is always the danger of serious price reaction on the part of overstocked retailers.

"With respect to the trade practice rules, and the possibility of a more stabilized market as a result of the adoption of reasonably uniform plans by the manufacturers, the situation has been tremendously complicated by the attitude of many retailers. Many stores apparently still do not realize, despite efforts made to educate them, that they are equally responsible under the law and under the rules for violations which they either induced or undue allowances which they knowingly accept. Thus far, the Trade Commission has taken no vigorous steps either to police the rules or to bring forcibly to the attention of both manufacturers and retailers that they are both liable to prosecution for any law violation arising out of the issuance of the rules.

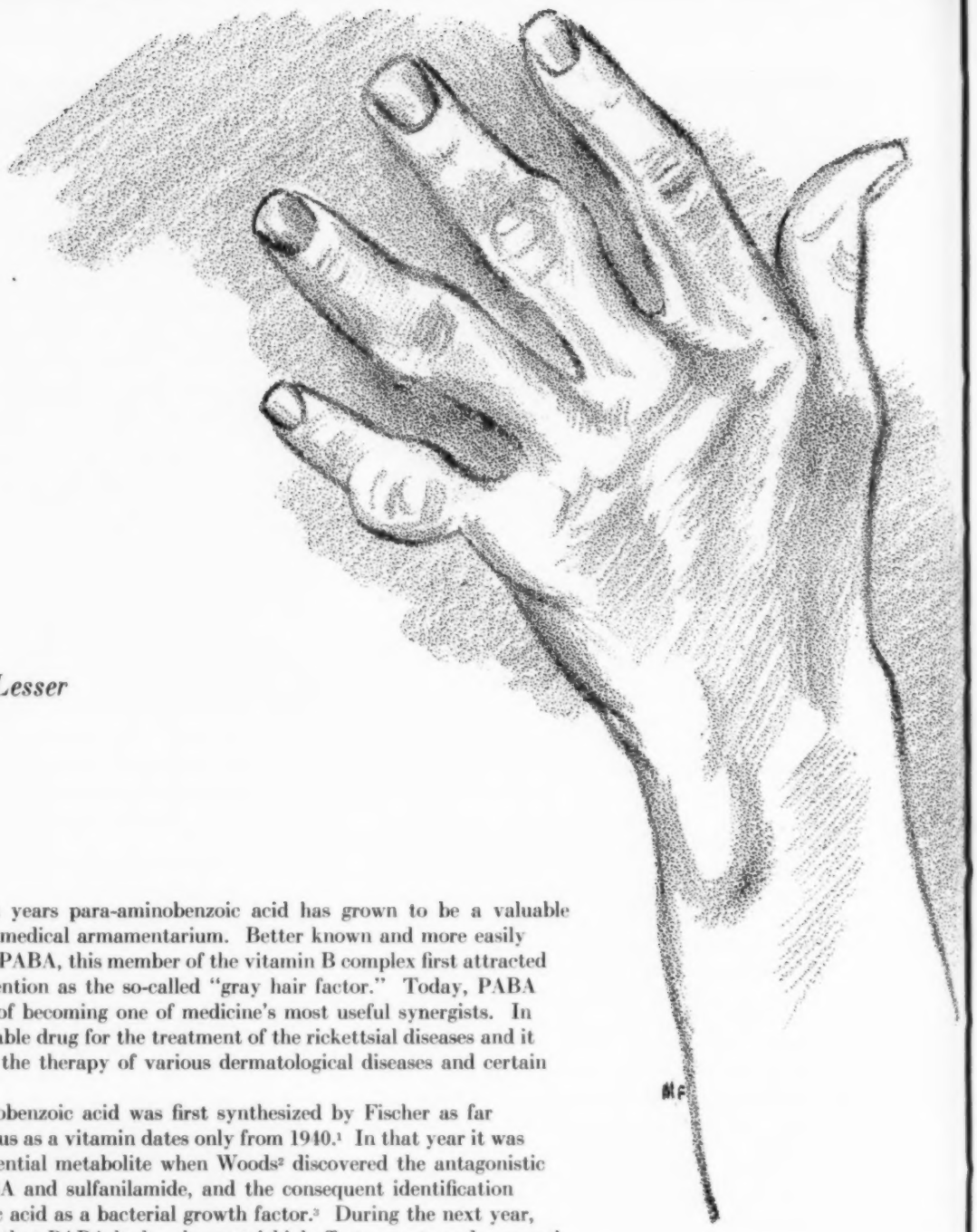
"Closely allied to the rules and their enforcement is the attitude of the Trade Commission with respect to amendments *proposed* to the Robinson-Patman Act. When the so-called basing-point bills, which would to some extent have liberalized the Robinson-Patman Act, were before a Congressional committee, the Federal Trade Commission made appearances in strong opposition to the bills themselves and especially to that section of the proposed legislation which would have permitted a manufacturer or seller to use good faith meeting of competition as a complete defense in cases brought against him under the Act. The Commission presented very little in the way of facts and figures to support their contention that the law should not be changed, but a great deal in the way of argument to the effect that no change should be made."

With respect to the investigation of the Delaney Committee, Mr. Mayham said that:

"From the very beginning it was quite obvious that the Delaney committee, the counsel for the Delaney committee, and the affected bureaus of the government had no intention in the world of presenting a report which would give both sides of the argument as to whether the law needed amendment or not. Selection of witnesses to be invited clearly showed that, and the attitude of counsel for the committee in questioning those witnesses who did appear in the early hearings added further proof, but it was the attitude of the Food and Drug Administration which most clearly convinced us that a T.G.A. appearance before the committee would be undesirable.

"First, one official of the Food and Drug Administration presented a letter to the committee designed to convince its members that there was great danger in the use of cosmetic preparations. This letter ignored the completely favorable history (*Continued on page 830*)

G. M. Factor, vice-president of Helene Curtis Industries, accepts from H. Gregory Thomas the 1952 Charles S. Welch Memorial Award for packages retailing for $1.00 or less. The product for which the award was made was Helene Curtis' Suave for Men.



by Milton A. Lesser

PABA

DURING recent years para-aminobenzoic acid has grown to be a valuable member of the medical armamentarium. Better known and more easily remembered as PABA, this member of the vitamin B complex first attracted widespread attention as the so-called "gray hair factor." Today, PABA shows promise of becoming one of medicine's most useful synergists. In addition, it is a valuable drug for the treatment of the rickettsial diseases and it has potentialities in the therapy of various dermatological diseases and certain other disorders.

Although para-aminobenzoic acid was first synthesized by Fischer as far back as 1863, its status as a vitamin dates only from 1940.[1] In that year it was recognized as an essential metabolite when Woods[2] discovered the antagonistic action between PABA and sulfanilamide, and the consequent identification of para-animobenzoic acid as a bacterial growth factor.[3] During the next year, Ansbacher[4] reported that PABA had a chromotrichial effect on rats and a growth effect on chicks. These and other findings strengthened the claim that the compound rated a place among the B group of vitamins.

PABA is a constituent of many foods including cereals, vegetables, liver, eggs and milk, with yeast as the richest source of the vitamin.[5] It has been shown that the vitamin is included in the molecular structure of the pteroylglutamates. Thus, with the elucidation of the structure of the folic acids, it was found that PABA comprises a part of the molecule of at least three folic acid forms.[1] Therefore, as noted by Robinson,[5] the occurrence of para-aminobenzoic acid in foodstuffs is obviously correlated to some extent with the occurrence of folic acid. However, PABA occurs in foods in the free state and in compounds other than folic acid. This authority also points out that there is convincing evidence that para-aminobenzoic acid is synthesized by the human intestinal flora, but it is not known whether the PABA so formed is absorbed.

Aside from its status as a vitamin and as a therapeutic agent, PABA has long been familiar as a laboratory reagent and as an intermediate for the production of dyes and drugs. It has been used, for example, in the manufacture of local anesthetics like benzocaine and procaine hydrochloride. According to the U.S.P. XIV, para-aminobenzoic acid occurs as white, or slightly yellow, odorless crystals or as a crystalline powder. The compound discolors on exposure to light.

In addition to para-aminobenzoic acid, U.S.P., the drug is also available commercially as sodium para-aminobenzoate, potassium para-aminobenzoate, calcium para-aminobenzoate, and, through a patented process,[6] as the bismuth salt. Of interest in this connection are the observations made by Zarafonetes[7] in a discussion of the therapeutic possibilities of PABA. He pointed out that, for administration to patients, it has been found that para-aminobenzoic acid is best tolerated as a neutral salt. This may be in the form of sodium para-aminobenzoate or potassium para-aminobenzoate. The potassium salt, says he, is particularly useful in patients who may develop edema with the sodium preparation. The potassium salt has been used extensively without evidence of potassium intoxication but it should not be administered in the presence of far advanced renal insufficiency.

He also notes that after oral administration, PABA is rapidly excreted in the urine. This may be an important consideration in treating certain conditions where it is desired to maintain a high blood level of the compound. While there is considerable latitude in the amount of PABA required, several toxic manifestations have been encountered during therapy with this drug. Nausea, sometimes associated with vomiting, is the most frequent reaction, but this usually subsides after the omission of a few doses. In addition, drug fever and dermatitis medicamentosa have been seen in a few cases. The most serious reaction reported by Zarafonetes was a fatal case of toxic hepatitis. In another report, Zarafonetes and Chandler[8] commented on the occurrence of hypoglycemia in certain patients given large quantities of PABA. It was noted, however, that the patients who developed this condition usually had restricted their dietary intakes because of anorexia, nausea and vomiting.

Pharmacologic studies[9] indicate that PABA has a fairly low toxicity index. Nonetheless, because large doses are often required (e.g. the U.S.P. lists the usual dose as 10 Gm.), the patient must be watched for the appearance of undesired side effects. When indicated, PABA may be administered parenterally in the form of its sodium salt; being given either subcutaneously or intravenously although the maximum levels obtained by subcutaneous injection were not as great as when the drug was given orally, Lomas and Salmon[10] found that the blood levels were attained more rapidly. Intravenous administration rapidly produced high levels, but these were not maintained.

Although it has been shown that para-aminobenzoic acid meets the requirements for admission into the vitamin B complex, there are no data on its requirement for maintenance of normal human nutrition.[1] However, as pointed out by Tabor and her colleagues[11] in their report on the metabolism of this compound, the demonstration that PABA antagonizes the antibacterial action of sulfonamides, its isolation from yeast, its rickettsiostatic action and the presence of the PABA radical in folic acid has stimulated interest in the pharmacology of this compound.

It may be said that today's interest in the biochemical aspects of PABA began with Wood's[2] observations on the competition between this compound and sulfanilamide. This action has since been studied by other investigators[12,13] and, as recently stated by Salter,[14] PABA is of particular interest to the chemo-

(*Continued on page 824*)

Peppermint Oil

by Leo A. Sciuchetti
ASSOCIATE PROFESSOR OF PHARMACOGNOSY
and
Herman C. Forslund
ASSOCIATE PROFESSOR OF PHARMACEUTICAL CHEMISTRY

Piling slug of spent hay after distillation.

Checking oil sample during test run on experimental still.

COMMERCIAL peppermint culture was introduced into the United States about 1812, at Ashfield, Mass., and by 1825 several hundred acres were under cultivation there[1]. About 1816 the peppermint crop became established in Wayne County, N. Y., and from there its culture extended westward, first to northern Ohio and later to southern Michigan, where in 1835 the first plantings were made in St. Joseph County. The success of this venture led to the extension of the industry into the southwestern part of the State and into the northern counties of Indiana. The large areas of muck soil were found to be so well adapted to mint culture that this region soon became the center of production. Plantings in central New York have been gradually reduced until at present no commercial plantings are found there. Success in mint culture on the muck lands of the Middle West naturally led to experimental plantings in other parts of the country having similar soils. About 1909[2] it was found that in parts of western Oregon and Washington the soil and climate were favorable. The mint crop was soon introduced along the Willamette River in Oregon and on both sides of the Columbia River and on the islands from Portland west. In recent years the crop has become firmly established in the irrigated districts of the Yakima Valley from Yakima east to the Kennewick area and also in the Sacramento delta district of San Joaquin County, California.

Production In Oregon

Approximately 70 per cent of the estimated peppermint acreage in Oregon is located within the Willamette Valley[3]. The valley consists of the following nine counties along the Willamette River: Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington and Yamhill[4]. The peppermint acreage in the Willamette Valley has shown a steady increase in the past 15 years. High prices during the war and postwar years have had much to do with the 100 per cent increase during the past five years in Oregon. In 1916 it was estimated that 25,000 acres of mint were under cultivation in the United States, nearly all of which were in the states of Michigan, Indiana and Oregon. By 1930, peppermint acreage in the United States had reached 56,220 acres (Figure 1). Eight years later, in 1938, peppermint acreage had diminished to a total of 31,160 acres. Over a period of 10 years, low prices, disease and poor quality oil had combined to reduce Indiana peppermint acreage from 39,200 acres in 1929 to 7,400 acres in 1938. In 1939, peppermint acreage was again on the increase and continued to expand during the war years, reaching a peak of 47,400 acres in 1947—the largest acreage since 1930[5].

Peppermint oil is now produced mainly in two areas of the United States: the Midwest, including southern Michigan, northern Indiana and northern Ohio; and the Pacific Northwest, which includes the states of Washington and Oregon. There has been a definite shift in production from the East to the West. Indications are that the Pacific Northwest may become the center of peppermint oil production in the not-too-distant future. Michigan and Indiana have been losing ground because of the deadly virus disease, mint anthracnose. Washington and Oregon, on the other hand, have been increasing their peppermint acreage, and have led in the production of mint oil in the last two years[6].

"Production has increased over the years in spite of fluctuations in acreage. Higher yields have served to keep production up. After a sharp decrease in 1931 and 1932, national production of mint oil increased rapidly, reaching a high of 1,265,000 pounds in 1935 (Figure 2). A rather sharp decrease followed in

(Continued on page 843)

Figure 2. Peppermint oil production in the United States, in the Midwest, and in the Pacific Northwest areas. 1929-49

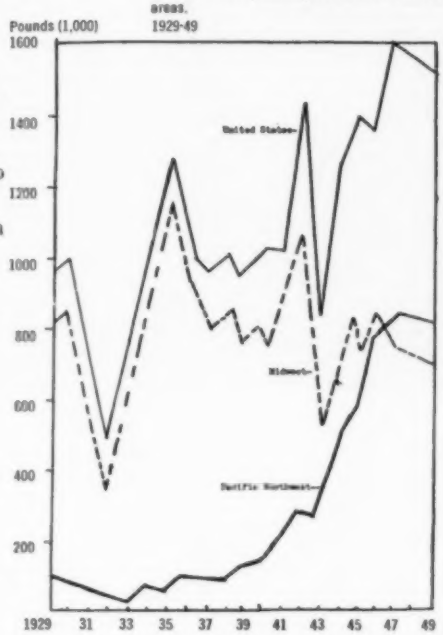
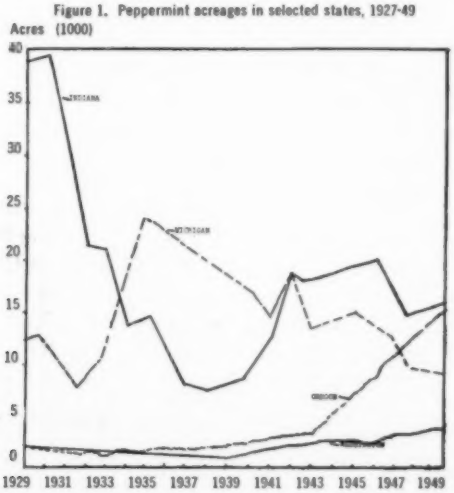


Figure 1. Peppermint acreages in selected states, 1927-49



Edward T. T. Williams, president of Lambert Pharmacal Company, was elected president of the Proprietary Association for the coming year.

Other officers elected are: First vice-president, Stanley I. Clark, vice-president, Sterling Drug; Second vice-president, S. M. Rising, J. H. Gulid Co.; Third vice-president, Frederick E. Rathburn, Olive Tablet Company.

Elected to the executive committee for three-year terms were: Dr. F. Jackson Andrews, president, Emerson Drug Company; James B. Braun, president, The Murine Company; James H. Grove, president, The Grove Laboratories; and H. H. Hoyt, president, Carter Products. Retiring president, Lupton Patten, president, The Chattanooga Medicine Co., was elected to a one-year term on the executive committee.

Proprietary Association Meeting

"CONTRARY to a popular view, a majority of the drug and chemical industry is not dominated by individuals of low integrity whose principal purpose is to turn a quick dollar by exploiting poisonous and misbranded products to a gullible American public," Dr. M. H. Seevers told the 70th annual meeting of the Proprietary Association held at White Sulphur Springs, W. Va., May 22 to 24. Speaking on the Proprietary Industry of the Future from a Pharmacologist's View, Dr. Seevers said in part:

"A large majority of the industry recognizes the need for intelligently administered regulatory law if for no other reason than to protect the social-minded and law-abiding majority against a minority who refuse to accept the long-range view and persist in following the practices specifically proscribed by state and federal law as detrimental to the public interest. The drug industry is sprinkled liberally with big men, mentally and philosophically, who are willing to assume large personal risks in the attempted development of some technical achievement which may have great medical or sociological significance.

"Certain operators in the drug field choosing to exist on a short-range basis are the consistent and willful violators of both moral and legal codes and they deserve and often receive the type of treatment accorded to other antisocial factors.

"In government a large body of well-trained and devoted public servants in the technical area are honestly and intelligently trying to interpret the law in its original intent and in light of scientifically established facts.

"Contrary to popular view, all of the activities of governmental agencies are not dominated by individuals of great social philosophy, but some, and I hope it remains in a minority, are utilizing analagous or, in

some instances, the identical practices of which industry is accused, presumably on the theory that the end justifies the means and that it is necessary to fight fire with fire, in attempting to protect the public, from potential dangers, which from a scientific or any other point of view often turn out to be visionary hazards.

"I speak of such practices as the approval of the dissemination of misleading and scientifically unproven statements in the lay press concerning toxicity of compounds in order to influence legislation; the presentation of unscientific and incompetent evidence and opinion from the witness stand; the establishment of arbitrary levels of presumed safety which bear little if any relationship to the dictates of scientifically established fact when examined without bias and in relation to need; and even, I am sad to relate, the attempted coercion of potential investigators and witnesses—these and many more.

"In short, in many instances a pre-established administrative policy, which may or may not conform with the basic philosophy of the law under which such policy, is enforced, is maintained at all costs, even, in some instances, I am confident, against the scientific advice of its own technical staff. If such is not the case, the latter are unworthy of being classified as scientists.

"I venture to predict that if the methods presently used by several federal agencies; for example the type which have conditioned the activities and publications of the Delaney Committee are to represent a pattern for the future, then individual scientists in academic positions will no longer be proud to offer their services to government nor to derive a certain pleasure in the fact that they have never testified against the government.

"To be brutally frank, some of these agencies will find themselves in the unenviable position from which the proprietary industry is only beginning to emerge, of being unable to attract the interest of first rate scientists and physicians in their problems.

"To the pharmacologist's view certain facts appear to be crystal clear. There are certain premises which, I believe, are so sound sociologically, economically, medically, legally and ethically that they cannot be logically refuted. They are so important to the future of the proprietary industry that they could be engraved on the escutcheon of your association.

"Self-medication (and by inference self-diagnosis) is an inalienable human right and is not *ipso facto* controversial, when limited by the following corollaries.

a. Only compounds of a relatively low order of toxicity are to be made available for across the counter sale for home medication.

b. The public has the basic moral right to demand and to receive efficacy in the compounds which they purchase for use in home medication.

"It has always been of great interest to me that the industry whose very existence depends upon the primary tenet that self-medication is necessary should permit it to become contestable in the public mind because certain members have not adhered strictly to the corollaries which I have cited especially since the controversies which do arise almost invariably are concerned with problems relating to toxicity and efficacy,

"Present laws are in the main adequate to assure the public of relative safety. It is unfortunate that the policing was not done by the industry itself. As I see it, your principal current problem relates to the efficacy of present or potential products. In my opinion, this problem cries for a solution in your hands. Three alternative possibilities must be considered in evaluating your problem; a) The industry will take the initiative in raising its own sights and standards. b) New and efficacious agents will be uncovered which will eliminate the useless and inactive substances on a purely competitive basis. c) An aroused public, enlightened by the bombardments of modern day communication, will demand legislation to cover the area involved in the word efficacy.

"Suffice it to say that you as a group will never be able to convince the more intelligent strata of the American public that you are sincerely interested in the public health and welfare until the activities and philosophies of your advertising departments correspond more closely with those of your technical staff. Until this disparity is eliminated, you will not be able to muster the active lay, scientific and medical support which will place home medication in proper perspective and give it the dignity which it deserves. Whereas only the stupid or the biased will deny its fundamental place in modern society, the very premise itself has been obscured and rendered suspect in the public eye by some of the practices of the industry which nurtures its existence.

"The very nature of this premise forces you always to deal with agents of low toxicity and usually with compounds of lower grade or possibly borderline efficacy. The few exceptions to the latter statement, vitamins, anibiotics and antihistamines, confirm rather than refute this statement. I have no doubt that this list will be extended further as greater specificity of action is obtained in as yet undiscovered substances. You are, and will continue to be, confronted, therefore, with certain problems which are indigenous to your section of the pharmaceutical industry. I cite only a few which are self-evident to a pharmacologist—Laboratory methods for evaluating low activity substances are poor and often unreliable.—Criteria for determination of activity are often so inadequate that is is unsafe to put reliance on the immediate transfer of data obtained on animals to man, thus requiring carefully controlled clinical investigation.—Only the best qualified specialists with a wide laboratory and clinical experience are capable of accurately evaluating borderline toxicity or efficacy either in animals or man.—The best qualified scientists and clinicians are commonly so busy dealing with more potent compounds that they are often unwilling to engage in a study of agents of borderline activity. In such situations where the accurate appraisal of results often requires statistical

(*Continued on page 838*)

The Present & Future Importance of Hospital Exhibits

by Arthur F. Gormley

VICE PRESIDENT IN CHARGE OF SALES AND ADVERTISING, SCHENLEY LABORATORIES, INC.

SEEING and selling the individual doctor on the merits of a particular drug product and convincing him that he should prescribe it in his practice is at the heart of the pharmaceutical manufacturer's sales operation.

We can have the finest distributor organization available. Retail pharmacists can be loaded with our products and quivering with eagerness to fill a prescription. But unless we are able to tell the physician about the product's merits—convince him that he should be writing Rx's for it—we might just as well shut down our production plants.

Until now this hasn't been a particularly difficult problem. Salesmen have found a warm reception in most doctors' offices. Physicians want to know what's new in the drug field, how latest drug developments can help them to do a better job in caring for their patients. But this rosy picture of manufacturer-physician cooperation is beginning to cloud over. Time is the problem; doctors always are terribly pressed for time.

Who is to blame? Certainly not the doctors, who are just as interested as they ever were in therapeutic developments. And certainly not the manufacturers, who take every opportunity to insure that their salesmen are thorough workmen—fully familiar with their products, brief and to the point in their sales presentations. The trouble is that doctors just don't have enough time to see everyone they would like to.

Obviously, the number of salesmen is not going to be decreased. There are too many products worthy of the doctor's consideration. In the interest of better health for all, if for no other reason, the number of salesmen will probably increase in the years to come.

I believe that one solution to this dilemma is the hospital exhibit. I further believe that the hospital

exhibit will prove increasingly popular and effective in the years to come as the number of detail men increases and more demands are made on the doctor's time.

Granting, then, that hospital exhibits offer a convenient means of reaching a great number of doctors with minimum effort on the part of the salesman and a minimum consumption of the physician's time, we must ask ourselves what we as manufacturers expects a hospital exhibit to do for us.

From the experiences of Schenley Laboratories during the past few years, I think it is safe to assume that an exhibit, whether a small one at a hospital or a large one at a national or state medical meeting, can be expected to do two things:

1. Attract favorable attention.
2. Create immediate interest.

It has been our experience that an exhibit designed to focus attention on one or two products—seldom more— will do both. We can hardly expect it to do anything else.

A well-planned hospital exhibit can capture the attention of doctors and stimulate their interest, and do this at a glance. It will provide you with a group of prospects who are standing before your exhibit ready to be sold on the product or products being featured. That is the psychological moment to have your salesman take over with a friendly greeting and sell the product.

I say "sell" advisedly, for, if I may be permitted to digress for a moment, I dislike the word "detail." It's an old-fashioned word and it has a ring of over-professionalism to it. At Schenley Laboratories we call our men "salesmen"—and we expect them to sell. And I believe that is what you expect your men to do, too

Some major pharmaceutical companies still refer to their salesmen as "professional service representatives" or "medical service representatives." Such titles do nothing but encourage the men in the notion that they are not salesmen. I can recall in my own experience that I once called myself a medical service representative until I realized that I couldn't cash a fancy name at any bank. From that day on I called myself a salesman and started to earn some money for myself and for my company.

I stress the importance of selling because unless you place one of your best-qualified and experienced salesmen in charge of your hospital exhibit, you might just as well table the whole idea. It won't work unless you have capable men to take advantage of the attention and interest created by the exhibit itself. You have to be able to count on your salesman to sell the five w's:

1. What is the product?
2. What will it do?
3. Who says so?
4. What does it cost?
5. Where can my patients get it on Rx?

These are the points you as a manufacturer want to put across. And it is in the convenience and speed with which you can do this job with a great number of doctors that the value of a hospital exhibit lies. Your salesman has a chance to meet and talk with the hard-to-see doctors, the real busy doctors, the ones who write 75 per cent of the Rx's in any given community. These are the doctors who find it increasingly difficult to see all the salesmen who call at their offices.

Hospital exhibits are the logical solution to the doctors' crowded schedule and your desire to do a thorough selling job. This is true for a number of reasons:

1. They offer an excellent medium through which to introduce new products, especially those that are primarily intended for routine hospital use, such as parenteral solutions, antibiotics, and mercurial diuertics.

2. They are an excellent means of discussing new uses for established products, new methods of administration, and new dosage schedules.

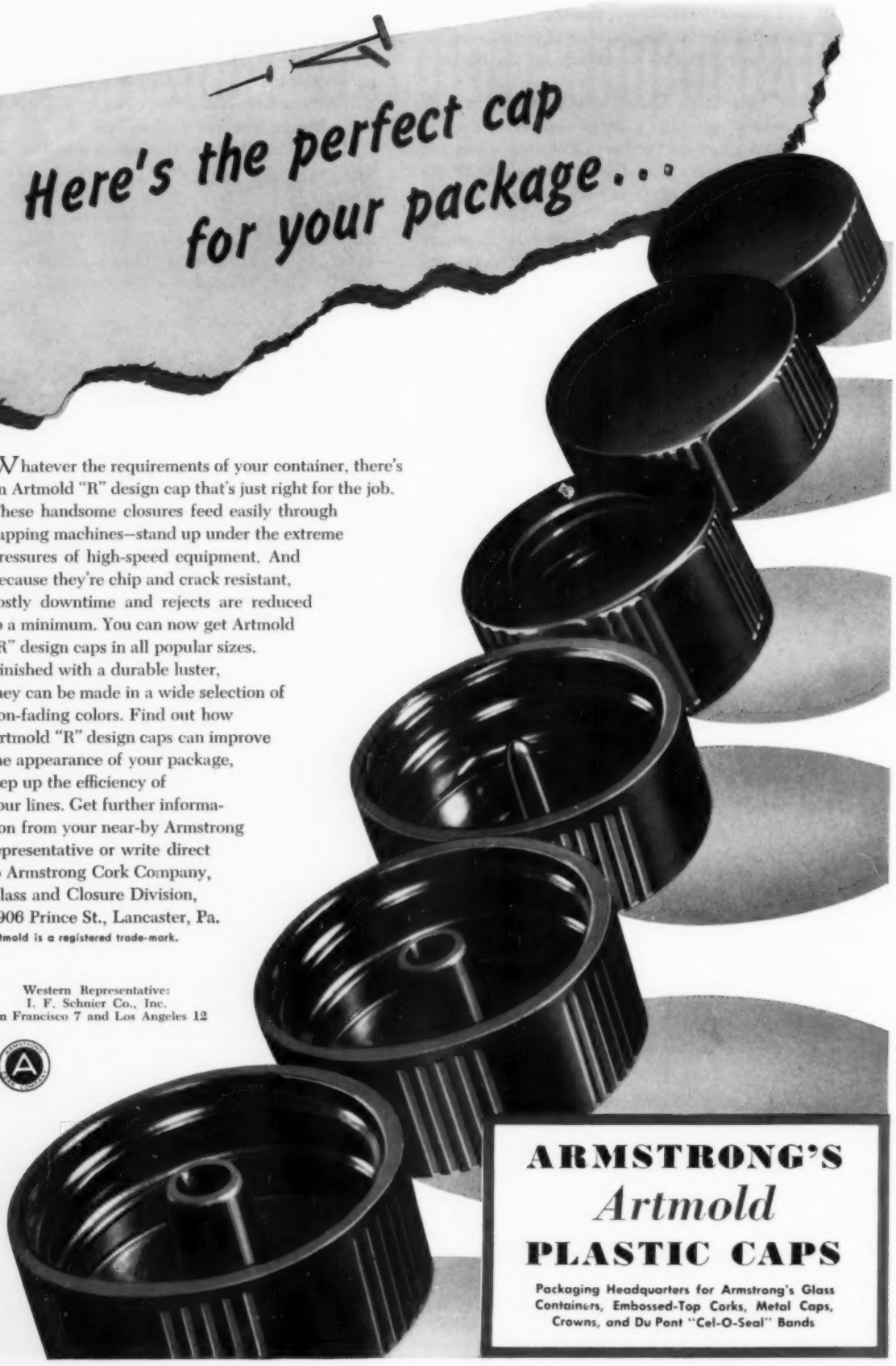
3. They help your salesman sell your products to a large number of doctors in a short time.

4. They help your salesman concentrate his selling efforts upon important and influential hospital staff members at a time when they are more willing to take the time to discuss the merits of a product. The doctors are relaxed and more receptive because they're not answering the telephone or thinking about a patient in the next room.

5. They make it possible to enlist the aid of convinced users of your products among doctors present to persuade other doctors to try them too.

(Continued on page 840)

Here's the perfect cap for your package...



Whatever the requirements of your container, there's an Artmold "R" design cap that's just right for the job. These handsome closures feed easily through capping machines—stand up under the extreme pressures of high-speed equipment. And because they're chip and crack resistant, costly downtime and rejects are reduced to a minimum. You can now get Artmold "R" design caps in all popular sizes. Finished with a durable luster, they can be made in a wide selection of non-fading colors. Find out how Artmold "R" design caps can improve the appearance of your package, step up the efficiency of your lines. Get further information from your near-by Armstrong representative or write direct to Armstrong Cork Company, Glass and Closure Division, 1906 Prince St., Lancaster, Pa.

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PLASTIC CAPS

Packaging Headquarters for Armstrong's Glass Containers, Embossed-Top Corks, Metal Caps, Crowns, and Du Pont "Cel-O-Seal" Bands

Packaging and Selling

Cosmetic Status

The new consumer analysis completed by the Milwaukee Journal of the greater Milwaukee Market and by the McClatchy Newspapers for the three (newspapers) Bees in the Sacramento, Modesto and Fresno metropolitan markets give us some interesting information as to how various cosmetic products are faring nowadays. For instance,

PERMANENT WAVE KITS: These products give some indication of approaching market saturation. In Milwaukee 51.3 per cent of the people were using these kits in 1950 and only 44.3 per cent in 1952. In Sacramento in 1947 percentage of users was 14 per cent as compared to 53.6 per cent in 1952. Fresno users were 15.4 per cent in 1947 and 49.9 per cent in 1952. In Modesto the percentages were 16.4 per cent in 1947, 51.8 per cent in 1952. Judging from the decline over three years in Milwaukee, any increase above the 50 per cent for metropolitan users is going to be a tough struggle.

This is a narrow market of active competitors. The number of brands in each of these cities ranges from 4 to 5 brands with an additional 8 brands, each receiving less than 1 per cent of the market.

The leading brand in this market ranges from 48.8 per cent to 48.1 per cent.

DEODORANTS FOR WOMEN: Cream deodorants are by far the most popular forms of this product. The percentage using cream ranges from 52 to 63.6 per cent. Spray deodorant is a close contender with liquid, and has a strong leadership which is reversed in some markets. For instance, in Milwaukee Spray has 33.2 per cent of the market as compared to 9.1 per cent for the liquid, whereas in Sacramento the liquid has 20.5 per cent of the market and the Spray 10.3 per cent. Pads average between two and three per cent of the market with all other forms running below 5 per cent used. The use of deodorants by women shows a consistent increase. In Milwaukee 81.5 per cent of the women used this product in 1949 compared to 86.4 per cent in 1952. This percentage was borne out in the three California cities where the present use of deodorants by women is running at 87 per cent.

The leading brand seems to have from 17 to 20 per cent of this market with the second brand averaging from 12 to 14 per cent. About 15 brands are in active competition with from 44 to 151 brands, each receiving less than 1 per cent market in these cities.

DEODORANTS FOR MEN: There seems to be a geographical question as to the market status of deodorants for men. In Milwaukee 39.1 per cent of the men were using this product in 1948 as compared to 48.4 per cent in 1952. However, in the three California cities each shows a decline in consumption typified by Sacramento, 48.8 per cent of the men using this product compared to 42 per cent in 1952. Here again a great number of brands are in competition. For instance, in Milwaukee 17 brands each received more than 1 per cent of the market and 117 brands each received less than 1 per cent. In Milwaukee Spray form of deodorant has a preference by 40.6 per cent, whereas in California this preference is 13 per cent. Cream is preferred by 40.2 per cent of the men in Milwaukee and by over 50 per cent of the men in the California cities.

TOOTH PASTE: In these surveys tooth paste is just about holding its market in Milwaukee. In 1949 84.6 per cent were using tooth paste compared to 84 per cent in 1952. In Sacramento there was a slight increase from 74.3 per cent in 1947 compared with 75.1 per cent in this year. One brand has an outstanding leadership among the nine to 12 brands mentioned running from 45 to 50 per cent a market preference. As an indication of the spreading distribution in tooth paste, out of nine brands mentioned in Sacramento eight are for sale in grocery supermarkets.

TOOTH POWDER: In Milwaukee in 1951 tooth powder was bought by 36.6 per cent as compared to 30 per cent in 1952. However, over a longer period in Sacramento tooth powder showed an increase of from 40.7 per cent in 1947 to 46.8 per cent in 1952.

LIQUID HAND LOTION: This product seems to be just barely holding its own with an increase in one city and a slight decrease in the three cities of this survey. In Milwaukee 68 per cent of the women are using a liquid hand lotion, whereas in Sacramento this percentage is 75 per cent, in Fresno 73.1 per cent and in Modesto 77.3 per cent. The leaders in these cities usually have a large percent of the market ranging from 34 to over 40 per cent. From 11 to 14 brands divide this market with a large number ranging up to 128 brands each receiving less than 1 per cent of the business.

This product gives an interesting indication of the release of volume business to distribution in the cosmetic industry. In these California cities the number 1 and number 2 brands rate from 95 per cent to 100 per cent drug store distribution. However, another brand sold in selected distribution is with 6 per cent distribution in Sacramento and is sixth in order of sale. This compares to another brand which has 94 per cent distribution and is eleventh in order of sale. Again in Fresno this same selected distribution brand is sixth in sale with 27 per cent drug store distribution as compared to the same brand used in the comparison above which now takes thirteenth place and with 100 per cent distribution. This same comparison exists also in Modesto.

HAND CREAM: Although purchase of this product showed a substantial slump in Milwaukee dropping from 53.1 per cent in 1951 to 39.3 per cent in 1952 in each of the three California figures hand creams have shown a moderate increase in popularity.

From 14 to 19 brands control this market with the leading seller averaging from 23 to 30 per cent of the market. A large number of brands are competing here for the slim fringe of the market running up to 132 brands each of which receive less than 1 per cent of the market.

FACIAL CREAMS: In each of these four city markets these cosmetic products have lost ground. This finding confirms what many other surveys show and

that is that face creams are in a declining market. For instance, in Milwaukee in 1948 77 per cent of the women were using a face cream whereas in 1952 68.2 per cent are using it. In Sacramento the comparison is 78.7 per cent in 1947 and 75.7 per cent in 1952. In Fresno the drop is from 77.6 per cent to 70.8 per cent and in Modesto 78.2 per cent to 73.7 per cent. In this market the leader ranges from 22 to 24 per cent of the market with from 15 to 18 brands in active competition with up to 126 brands each receiving less than 1 per cent of the market.

LIPSTICK: This number one cosmetic still shows growth although in two California cities there was a slight decline percentagewise. In Milwaukee in 1946 84.2 per cent of the women were using lipsticks and in 1952 this percentage was 88.7 per cent. There is close competition for leadership in this field with the three leading brands alternating in city leadership and each securing from 10 to 20 per cent of the market. An average of 15 brands make up this market with substantially over 100 additional brands all receiving less than 1 per cent of the market.

LIQUID SHAMPOOS: Although this product showed a slight increase in Milwaukee from 60.7 per cent in 1949 to 63.2 per cent in 1952 there was a rather drastic decline in popularity in the three California cities. For instance, in Sacramento in 1947 76.3 per cent of the women preferred a liquid shampoo compared to 64.5 per cent in 1952. In Fresno the drop in purchasing during this period was from 75.7 per cent to 58.5 per cent and in Modesto from 77.5 per cent to 59.6 per cent.

The leaders in this field generally received over 16 per cent of the market ranging as high as 28 per cent with a runner-up running from 13 to 18 per cent. There are from 15 to 18 brands in active competition with nearly 100 each competing for less than 1 per cent of the market.

CREAM SHAMPOO: For this product also Milwaukee shows a drop in use of from 46.9 per cent in 1949 to 40.8 per cent in 1952. In the three California cities this product shows a very substantial jump in sales from 1947 to 1949 and then a static market position with a slight drop in two cities. One leader has a substantial share of this market ranging from 22 to 33 per cent of users. An average of 15 brands rules the market with nearly 80 brands competing for the fringe.

HAIR DRESSING: Except for Milwaukee where there has been a slight increase in sales the three California cities show a drop of several points. There are from 10 to 14 active brands in this market with one outstanding leader and from 47 to 120 minor brands.

So far as these surveys represent metropolitan markets it would seem that a very high percentage of cosmetic products have been going through a minor decline in usage during the last three years.

Universal Cosmetics

We are accustomed in this country to accepting the fact that most of the principal cosmetics are in almost universal use. We don't always stop to think as manufacturers or retailers that practically every American woman, no matter where she lives or what her particular environment may be, is a good customer for the products of this industry.

A recent survey by the Des Moines Sunday Register gives an interesting picture of how the women in that Iowa City and on the surrounding farms use cosmetics. Following is a table taken from that survey showing the percentage of women in town and on the farm who are regular cosmetic users. There doesn't seem to be much difference between Metropolitan Avenue and Rustic Lane in any part of this country.

DES MOINES SUNDAY REGISTER

	Town	*Farm*
Face Powder	**92.1%**	**92.4%**
Facial Cream	**83.5**	**79.3**
Hand Lotions and Creams	**87.5**	**88.9**
Regular Hair Tonic	**44.0**	**48.2**
Lipstick	**84.2**	**78.9**
Nail Polish	**59.6**	**49.9**
Permanent Wave Kit	**49.3**	**53.2**
Liquid Shampoo	**61.5**	**62.1**
Cream Shampoo	**56.5**	**59.8**

Desiccants for Packaging

Development of a complete line of desiccants known as "Dri-Pax" has been announced by the Davison Chemical Corporation. These products have been designed to meet the needs of the pharmaceutical industry for packaging products which require protection from moisture damage.

Among these products the company points out are antibiotics and sulfur drugs which among other pharmaceuticals are extremely sensitive to moisture, leading to loss of strength and limited shelf life. Included also are protection of effervescent products from premature action, prevention of hydration of hygroscopic materials and the prevention of sticking or caking of products or of chemical changes because of moisture.

Among the new Dri-Pax products are pelletized desiccants wrapped in printed colored plastic and supplied in different diameters and thicknesses to fit any type of container or supply any needed quantity. These pellets are also fabricated into bottle caps so that the cap and desiccant are one unit.

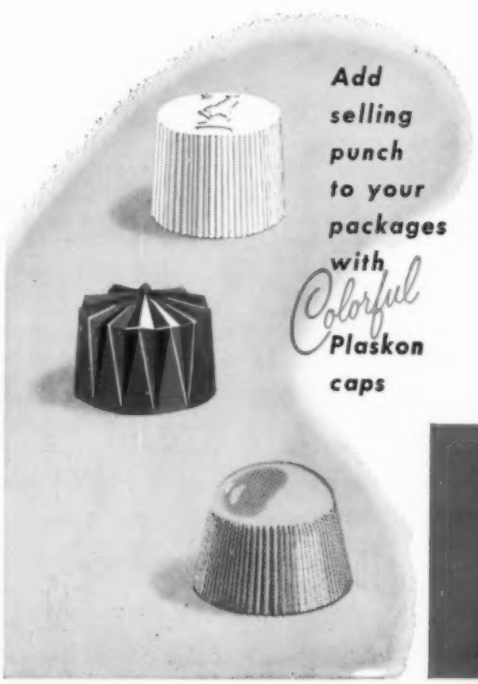
A wide variety of new Dri-Pax desiccants are offered in various forms for the specific purpose of the economical cost.

Advertising O. K.

The duPont Co., which spent $10 million for advertising in 1951, are firm believers in the value of money spent in this way, as shown from the following quotations taken from their last annual report:

> "The duPont Company continues the use of advertising to assist in developing and expanding markets for its products. Experience of the Company confirms the modern business view that advertising is one of the most efficient means available to promote large-volume sales in minimum time and at minimum cost . . . It is believed that this practice will continue to be well rewarded."

Say "BUY ME!"...with a colorful PLASKON cap!



Colored closures help sell your product. And Plaskon gives you top sales appeal with beautiful, eye-catching colors that literally say to customers, "take me off the shelf . . . take me home."

There's a wide range of gorgeous Plaskon molded colors . . . from subtle pastel tints to bold, brilliant shades. And *every* Plaskon color is permanent, nonfading, won't chip or mar. What's more, you're sure of smoothly rounded contours, a fine, rich finish that says "quality."

Molded color closures of Plaskon plastic resist solvents, grease, oils, dilute acids, alkalies, and hold their shape, too.

These are only a few of the reasons why *some of the most famous names* in drugs, cosmetics and pharmaceuticals are in packages with Plaskon caps. Whether you are a pharmacist, retailer, wholesaler or manufacturer, *insist* on beautiful Plaskon when you order molded plastic closures from your supplier.

INSIST ON

PLASKON®

MOLDING COMPOUNDS

FOR QUALITY AND COLOR IN PLASTICS

PLASKON DIVISION

Libbey • Owens • Ford Glass Company

Toledo 6, Ohio

In Canada:

Canadian Industries, Ltd. • Montreal, P.Q.

Branch Offices:

Boston • Chicago • Los Angeles • New York

Manufacturers of Molding Compounds, Resin Glues, Coating Resins

Empress Molded Closures are lovely to look at . . . a delight to use.

Bedeck your package with beauty-a Molded Closure!

FOR that finished look, add the finishing touch to your package—a decorative Owens-Illinois molded closure.

Available in a wide range of colors and sizes, Owens-Illinois plastic closures not only win new friends at the point of purchase, but *keep them*. They give your package an appealing look . . . won't rust, stick or corrode...give a more positive seal and reseal.

There's no limit on creative ingenuity to help you improve the appearance and efficiency of your package. So act now to give your product outstanding sales appeal with a new Owens-Illinois package . . . a package consumers will find lovely to look at . . . a pleasure to use.

CLOSURE DIVISION — OWENS-ILLINOIS GLASS COMPANY

TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

According to a recent article in Advertising Age, some very valuable facts on advertising were developed from the study of data published by the Internal Revenue Bureau. It is stated that the total estimated volume of advertising during 1948 was 73/100ths of 1 per cent of the total sales for that year. The actual figures are: Total sales for 1948 at $594,040,036,000 and estimated advertising expenditures at $4,344,297,-000.

The Lost Million

The Richard Hudnut Division of Warner Hudnut after having quite a time deciding how to spend the million dollars in advertising money that Walter Winchell has been getting for his radio time, now decided that, with the exception of some money for newspaper cooperative advertising, the bulk of Hudnut's advertising this year will go to the Sunday Supplements.

Name Visibility

There is quite a movement package-wise in the industry to redesign the package so that the brand name will be more conspicuous and more legible. The competition for visibility, individuality and attention value on the retailers' shelf is becoming a number one problem in merchandising. Bristol-Myers is now completing tests on a new package which will make Ipana considerably easier to identify at a distance and Pepsodent is making similar changes to secure greater emphasis for the word Pepsodent. Harriet Hubbard Ayer has just completed a package for their line of creams so that the brand name is now considerably larger and in more attractive script than the printed letters which used to distinguish this jar.

Super-Cosmetics

Very few of the makers of cosmetic and toilet article staples have lost any time in lining up grocery store distribution. For instance, here is what the Milwaukee Journal has discovered in their annual market survey just published. Under the title "Per Cent and Number of Greater Milwaukee Families Who Buy Toilet Articles or Cosmetics in Grocery Stores" is the following table:

Year	*Per Cent*	*Number*
1952	32.0	85,472
1951	27.4	71,269
1950	18.6	47,246
1948	8.2	19,596

Here is an additional picture of this developing situation in cosmetic distribution as shown by the Bee Newspapers in Sacramento, Modesto and Fresno.

Out of ten permanent wave kits, each of which sells to more than 1 per cent of the market, seven have distribution in grocery stores in Sacramento, 4 out of 8 in Fresno and 6 out of 9 brands in Modesto. As for deodorants, where 18 brands are competing for this market in Sacramento, 11 of these, not including a prominent house-to-house brand, are distributed through grocery stores. In Fresno this percentage is 10 out of 15 and in Modesto 8 out of 17.

It would appear from these surveys that tooth paste is practically unanimous among the leading brands in seeking grocery store distribution. Only one prominent brand sold by an ethical pharmaceutical house is not for sale in grocery stores.

Liquid shampoos are another product which has been vigorously wooing the grocery store. In the city of Sacramento, typical of the other two previously mentioned California cities, 14 brands of liquid shampoo out of a total of 20 brands, each of which have one or more per cent of the market, are in the grocery stores. This same average percentage applies to cream shampoo.

Other cosmetic products included in this survey did not show the status of grocery store distribution. However, we are certainly getting enough material from the new surveys that are appearing to show very clearly that the products of the cosmetic industry are being divided, with a very wide cleavage, into one group which must be classified as a staple or utility with a price adjusted to this kind of product and capable of being sold at retail without any explanation or personal selling, and opposed to this a completely different group of cosmetics where the products will include qualities which will continue to need public education and selling. The cosmetic industry certainly has its east and its west and it will be interesting to observe whether the two can ever meet to an extent that will be profitable from a retail viewpoint.

Solo Display Pak

The Solo Display PAK is a triangular package that serves as a practical carton and also provides three tilted display surfaces so that no matter how it is dropped or placed on the counter, the sales picture and message is always exposed to the customer's eye.

This package was created by Allen Berni and Associates, Inc. and is being used by I. B. Kleinert Company for the Sava-Wave Swim Cap. Twelve of these cartons are packed in a compact shipping display container.

Ayer's New Products

Ayer-Magic is a new cosmetic on which Harriet Hubbard Ayer is planning their hopes for a bigger year in 1952. This product has to be good because the advertising promises "in 15 seconds you can look 20 years younger." According to Ayer, face shadows which are an illusion caused by light, occur on four facial areas, that is, around the mouth, around the nose, under the eyes and at the temples. Ayer-Magic which is the result reportedly of two years work in the laboratory and with the help of a Hollywood make-up man, counteracts this effect of light and eliminates the shadows.

Ayer will also soon launch a large advertising campaign in class magazines on three new colognes. These colognes are the result of a great deal of market and laboratory research directed toward discovering the basic fragrance tastes of American women and developing a cologne for each basic field of taste. These colognes

. . . CHOOSE THE MOST POWERFUL LIPSTICK SAMPLER EVER DEVISED—

LIPETTES

THERE'S NOTHING LIKE THEM

Lipettes are sturdy matchsticks in a matchbook style package with your own lipstick on the tip of each match.

LOVELY TO LOOK AT

Your lipstick sample packages in matchbook form can be dressed up and printed with your choice of advertising copy and cuts. Your color schemes and designs can be matched perfectly. There is plenty of space, too, for your selling message—up to twelve square inches!

ON EVERYBODY'S LIPS

Literally and figuratively, your lipstick will be on everybody's lips. Women will be talking about it, sampling it, buying it because you have chosen the most versatile, the most attractive sampler on the market.

A MULTI-PURPOSE SAMPLER

Each stick is tipped with a generous application of lipstick to allow your customer to select and try her shade and approve of your lipstick's texture. Each package contains from three to fifteen lipstick-tipped sticks. This means each package is worth from three to fifteen demonstrations.

YES! IT'S TRUE!

Sampling *is* true with Lipettes. Any lipstick, including the indelibles, readily adapts itself to Lipette sticks. No physical, no chemical, no shade changes take place. Lipstick on Lipettes is a perfect sample of your regular lipstick.

COSTS AND SHORTAGES FADE AWAY

From the angle of costs and shortages, Lipettes stand out. *Your direct cost per application comes down to as low as one-fifth of a cent each.* There are no problems of shortages of the materials that go into the manufacture of Lipettes. A steady supply is readily available. More important, however, is the fact that you are buying sales-producing samples, the kind that will enable thousands of women to try and buy your lipstick.

FREE TO YOU

We will be glad to process 100 Lipette packages for you, using your lipstick (or perfume, rouge or eyeshadow) on each stick. This service is free and entails no obligation. In addition, we will be happy to submit specially designed packages to fit your needs, to cooperate with you on adapting other products to Lipettes or advise you on the use of Lipettes for special promotions. Please contact us today.

WRITE DEPT. D FOR FREE SAMPLES AND FURTHER INFORMATION

LIPETTE *Company* DIV. PERIN PRODUCTS CORP. 16 City Sq., Boston 29, Mass.

will be featured as fragrance products in an abrupt departure from the basic conception of the purpose of cologne; that is, these colognes will not be offered for use as an after bath or body odorant or for any similar purpose which is the original use of colognes nor will they be offered as a diluted form of an expensive fragrance. The Ayer conception is to make these colognes stand on their own feet as a fragrance to be used as a fragrance. The advertising will also state that these colognes have unusually long sustained lasting power.

Spill-Proof Diffusers and Plugs for Bottles

A line of polyethylene diffusers and plugs have been introduced by the Sudbury Import Co.

Designed for the dual purpose of reducing the opening in the mouth of the container and replacing the need for a cap liner, the diffuser is obtainable in a full scale of sizes. The use of the diffuser converts your bottle into a spill-proof dispenser and the tight seal prevents evaporation of the contents.

By eliminating the opening in the top of the plug it should also provide a wonderful airtight seal for liquids of all types, particularly where export or rough handling of packages might occur. The tightening of the cap exerts pressure on the top of the plug causing tighter seal between the walls of the plug and the inside of the mouth of the bottle.

A Green Industry

It is getting to the point where it is virtually impossible to keep up with the procession in reporting the new products that are turning to chlorophyll. One of the favorite remarks of the botanist has always been that we live in a green world. It seems now that this trade had better get used to living in a green industry.

Colgate is reported to be putting chlorophyll into Palmolive soap and Morton Salt Company has scheduled a chlorophyll tooth paste. There are several new reports which we just can't bring ourselves to chronicle because they seem too extreme. As a matter of interest, just sit down and think up the most unlikely product in which chlorophyll could or should be introduced and then watch and see if within the next three or four days somebody doesn't do it.

Look out for the Novelty

A basic philosophy toward non-food items in the grocery supermarkets seems to be developing among this dynamic retail group, according to convention speeches and articles. According to one speaker recently: "Experience will show that where the new products can not be sold in accordance with basic supermarket principals they will be given up" According to this speaker, higher margins will not by itself be enough to justify this type of product in the supermarket. The speaker continues "in the long run, the extent to which non-food items becomes a well-established part of grocery operations depends not on the desires of any one group, not on the current interest in them, not on the amount of mark-up afforded. Instead, it will depend on the ability of the new products to take their place as an integral part of the family of products sold in the supermarket, on consumer acceptance, and on their ability to pay their way after the novelty has worn off.

This looks as if some operators are beginning to suspect that some of the non-food items, which are now getting enthusiastic attention in their store, may have an element of novelty in them which may not have lasting value from their viewpoint.

New Automatic Cap for Collapsible Tube

Latest development in tooth paste tube packaging is the "Genie Automatic Cap" introduced by Physician's Formula Cosmetics of 3823 Wilshire Blvd., Los Angeles. The plastic cap is not removed from the tube for extrusion of contents. To open the tube, according to instructions on the package, "Slit center of dome on cap with sharp razor or knife."

Exclusive cap design is self-sealing when pressure on the tube is released. Suppliers of the cap, Jay and Sunny Originals of Los Angeles, said the design is applicable to a variety of products besides tooth paste.

The new tube and carton were manufactured by Sheffield Tube Corp. Red and blue lettering on white ground provide attractive modern package for the new concentrated tooth paste.

Limits on the Hunch

According to Irving B. Harris, Executive V.P. of Toni, this particular company is pretty well through with taking flash opinions of its executives as business decisions. According to Mr. Harris, "It is immoral to debate a business issue; let's experiment and find out for sure." "Although there is still and always will be a big area in which business still operates on hunches, Toni is moving steadily toward more testing and market research."

African Belles Lookout!

Probably the most interesting advertising campaign as well as one of the largest is now in preparation by Chesebrough Manufacturing Company for Vaseline. This campaign is directed toward Africa and in addition to reaching the various national groups there such as the English, Afrikaans, Germans and Indians, will particularly penetrate into all of the native population areas. A wide variety of medium is being used as well as personalized copy and sales appeals.

Single Portion Package

What looks like a startling new experiment in packaging is the "single portion package" now on the market for experimental purposes by the Kraft Foods Company. According to this company, after three years experimenting, portion control packaging depends upon a demonstrated demand for smaller packages rising from the increasing number of married women holding jobs and the reduction in the size of family groups living under one roof. In addition to this, restaurants and institutions are putting in rigid cost controls that are substantially facilitated by operating on a portion basis.

Almost Everyone
IN THE COSMETIC INDUSTRY
uses
MASCHMEIJER
AROMATICS
...the finest that specialized skill and modern science can produce

MUSK
Ambrette—100%
Keton—100%
Xylol—100%

CITRONELLOL EXTRA

GERANIOL ABSOLUTE

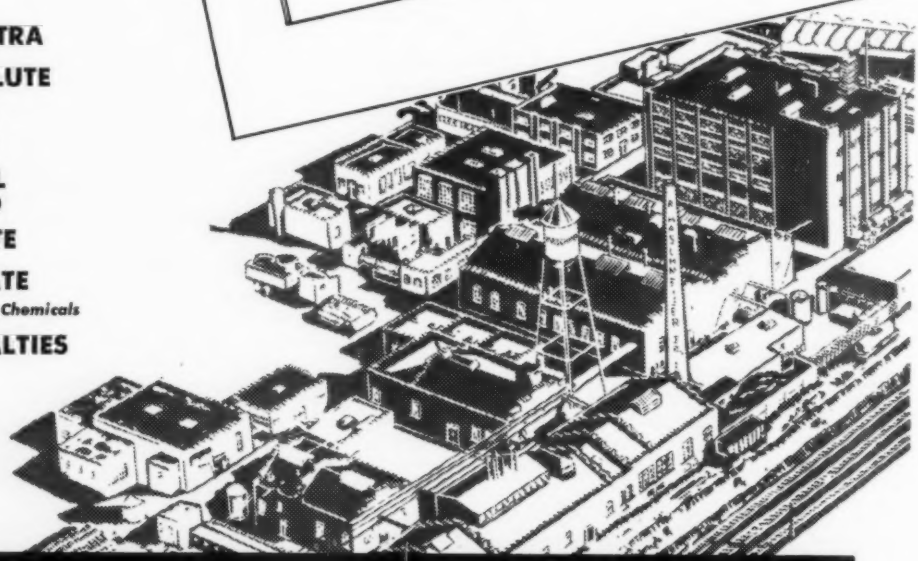
BENZYL ACETATE
(chlorine free)

BENZYL ALCOHOL
(chlorine free)

BENZYL BENZOATE

BENZYL SALICYLATE
And Other Fine Aromatic Chemicals

AROMATIC SPECIALTIES
- *Perfumes*
- *Soaps*
- *Cosmetics*



A. MASCHMEIJER JR., INC.
Manufacturers of Aromatic Products
45 West 16th Street • New York 11, N. Y.
Factory: Newark, N. J.

Doin's

Upjohn has released Depo-Testosterone, a more potent androgen which provides a smoother effect, and is used as replacement therapy in hypogonadism, male climacteric, cryptorchidism and testicular hypofunction. It is given by intramuscular injection.

Charbert is distributing five items of its men's line in lightweight plastic flasks in addition to their regular packaging. They include Gentlemen's Eau de Cologne and After Shaving Lotion, Gentlemen's Talcum, Gentlemen's Spray Deodorant and Creme Hair Dressing.

Nestle-LeMur has a special free-goods deal which lasts through July 15 to introduce the new packaging of their Nestle Egyptian Henna and also of their Hairlac perfumed hair lacquer. In each case two packages are being offered free with the purchase of ten.

Organon's ACTH preparation, Cortrophin, is now available in an improved form and is supplied as a dry powder packaged with a 5-cc. vial of special Cortrophin solvent. The reconstituted solution remains stable for at least a month at room temperature.

Parfums Evyan is packaging its Golden Shadow's cologne in a new carton lined with etched goldfoil, and lettered in maroon. It contains a four-fluid-ounce bottle.

Gourielli has introduced a Deodorant Stick suitable for both men and women. It is packaged in a distinctive glass bottle with a glossy black, crested package and sells for $1 plus tax.

Toni last month introduced a new Toni Trio composed of three home permanent kits, each one custom-made for a different type of hair. They include Regular Toni, for normal-to-wave hair; Super Toni, for hard-to-wave hair; and Very Gentle Toni, for easy-to-wave, bleached, dyed, or tinted hair, or hair with some natural curl.

Matchabelli has created a new cologne, Summer Shower, especially for hot weather enjoyment and refreshment. The water-blue color of the cologne in a crystal-clear bottle makes the lily-pond-in-the-rain design screened right on the bottle in full color look real and inviting.

The Lander Company's Emily Rogers New French Formula Lipstick has passed its three-million mark.

Bourjois has brough out a colorful combination package called Scented Satchel which contains travel sizes of Evening in Paris perfume, eau de cologne, and cologne stick. It is printed in red and blue on white clay coated boxboard.

Peggy Sage has designed new displays for the "Smartie" nail polish which appear in two shades, Soaring Red and Naturelle.

Marvin R. Thompson has introduced Marvite-MRT, Aqueous Multivitamin Therapeutic Capsules.

Lady Esther is offering a 57-cent saving to the consumer in the style-packaged combination of the popular Bridal Pink face powder along with an indelible lipstick in a matching shade in a nationwide promotion effort.

Bristol Laboratories are offering Cilloral 250 Powder with triple Sulfonamides which contains Buffered Penicillin Powder for the preparation of oral solution. It contains penicillin G potassium, sulfadiazine, sulfamerazine and sulfamethazine.

The E. L. Patch Co. is distributing Geratose, a new product for the prevention and treatment of hypercholesterolemia, atherosclerosis, liver damage and other similar conditions. It is supplied in bottles of 100 and 500 capsules each.

Helene Pessl is illustrating the little Little Lady items with large eight-color displays featuring Little Lady Toiletries.

Globe Pharmaceutical Distributing Co. last month launched an extensive consumer promotion program for its new product, Burn-Aid, a plasma-medicated bandage for burns. The campaign opened in Cincinnati, Fort Wayne and Peoria, with more market planned, working into complete national distribution.

Shulton is providing a new sales aid for the purse-size packages of Stick Cologne Concentrates, in the form of a display unit holding twelve cartoned stick colognes on three levels for the three fragrances, Old Spice, Friendship's Garden and Desert Flower.

Procter & Gamble is offering its Drene shampoo in a new plastic bottle, which is light, designed for easy griping, and easily refillable. The bottle holds six ounces and is priced at 98 cents. This is not a replacement of the popular Drene glass container.

THE RIGHT OIL FOR YOU MUST HAVE . . . .

UNIFORMITY
STRENGTH
QUALITY

Thousands of buyers know that Exchange Oil of Orange meets these qualifications consistently. They know that rigid, day-to-day laboratory control, combined with years of experience as the leader in the citrus products field, guarantees that Exchange Oil of Orange will always meet their most critical specifications.

Distributed in the United States exclusively by

FRITZSCHE BROTHERS, INC.
76 Ninth Avenue, New York 11, N. Y.

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DODGE & OLCOTT, INC.
180 Varick Street, New York 14, N. Y.

Exchange
OIL OF
ORANGE
U.S.P.

SUNKIST GROWERS
PRODUCTS DEPARTMENT • ONTARIO, CALIFORNIA
PRODUCING PLANT:
The Exchange Orange Products Co., Ontario, Calif.

Doin's ... (CONTINUED)

The Wm. S. Merrell Co. is distributing Tace, a new concept in estrogenic therapy, which is valuable in the palliative treatment of prostatic cancer. It provides estrogenic control with a minimum of side effects.

G. D. Searle & Co. has announced that both Banthine and Dramamine are now available in ampuled solution as well as in tablet form. Banthine may therefore be used intravenously or intramuscularly when oral medication is difficult or impractical and when more prompt action is desired. The Dramamine ampuls were introduced for preoperative use in the control of postoperative nausea and vomiting, as well as for advanced cases of motion sickness in which oral medication cannot be retained.

Wallace Laboratories are offering Bactratycin Ointment, a stable, virtually non-sensitizing, non-greasy water-miscible cream containing 0.1 per cent tyrothricin U.S.P. in a base which mixes with secretions, exudates and pus to provide intimate and thorough antibiotic medication of infected surfaces. They are also offering Intraderm Tyrothricin Solution, a clear, stable liquid containing 1 mg. tyrothricin in each cc., used for specific local antibiotic therapy in impetigo, acne, ulcers, and other conditions. It is said to be often effective when local penicillin fails.

Eaton Laboratories have prepared a new Furacin dosage form, Furacin Nasal *plain*, designed especially for injection into the nasal sinuses in treating sinusitis. The previous dosage form, Furacin Nasal with ephedrine, is being retained for use as in rhinitis where a vasoconstrictor is needed.

U. S. Vitamin Corp. is offering Aquasol E capsule and drops. The capsules provide 30 and 100 mg. of aqueous alpha-tocopherol, and the drops, 50 mg. of dl, alphatocopheryl acetate in aqueous solution. It is more rapidly absorbed, more fully utilized than E in oil solution. They are used in such conditions as threatened and habitual aborption, menopause, stasis ulcers, and stasis dermatitis.

Paula Harris Sales Co. has been market-testing a new cosmetic line, Pink Ermine, in several cities during the past three months, which is now ready for national distribution. The cosmetics are compounded of non-allergic ingredients with a peanut oil base. The first members of the group to be placed on the market are a cleansing cream, a night cream and a cream lotion. Other items will be added later.

Winthrop-Stearns has introduced Telepaque to the U. S. medical profession. It is a new radiopaque compound in tablet form for the diagnosis of gallbladder disorders. National introduction of the compound followed extensive clinical testing.

Boyle-Midway's Aero Shave, a shaving lather bomb, is getting advertising support in TV and radio plus newspapers in local markets with the slant that shavers can now enjoy 60 luxury shaves with "Push-Buttons Lather" for only 59 cents.

Bourjois has designed a Flower Print Cologne ensemble for spring and summer. The fragrances of Lilac and Lilly of the Valley are packaged in two-ounce bottles with laminated labels which remain fresh-looking and unsoiled.

Schering has prepared Cortogen Acetate Tablets with the active constituent, cortisone acetate (Compound E). It is indicated, with oral administration, in rheumatoid arthritis, rheumatic fever, early juvenile arthritis, and similar conditions, in which it is said to produce excellent results.

Wyeth has prepared a new penicillin compound, Bicillin, which is relatively nontoxic following intragastric administration to mice and dogs. It is relatively non-irritating to ocular mucosa, skin and muscle.

Pepsodent has been making a special offer of one nylon tooth brush in return for 25 cents and the end flaps from either the giant or economy size Pepsodent tooth paste carton. The handle of the brush is inscribed with the consumer's first name in 24 karat gold letters.

Winthrop-Stearns has introduced OpH, a new eye lotion with Neo-Synephrine hydrochloride, which provides safe, dependable decongestive action.

U. S. Vitamin Corp. has prepared Vi-Aqua Syrup, and Vi-Aqua capsules which combines the normally oil-soluble vitamins A and D in aqueous solution together with ascorbic acid and B complex factors.

The Vi-Aqua Capsules are the first product to provide in capsules the normally oil-soluble vitamins in combination with B complex factors and ascorbic acid.

Hoffmann-La Roche last month reduced its prices on Vitamin E to $250 per kilo for 100 grams or more; 28 cents per gram for an order of 5 to 99 grams; and 35 cents for 1 gram.

NEWS FROM RICHFORD

It looks like another big year for stick cologne.

We're certainly ready for it, and our new "PUSH-UP" stick cologne container in 3 purse sizes is already playing an important role in the planning of many top firms.

"PUSH-UP" and the other Richford engineered containers shown here are ready now.

If you have any container problems, we'll be glad to work with you.

Cordially,

P E Roehrich

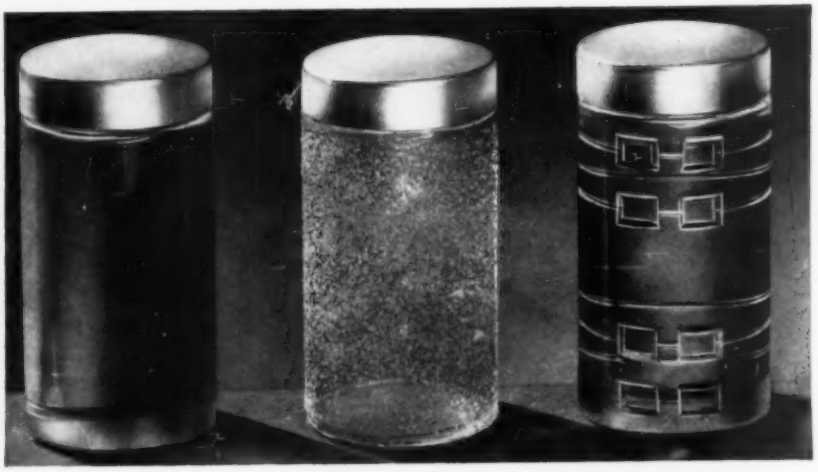
P. E. Roehrich, Pres.

RICHFORD — — CREATIVELY ENGINEERED STICK COLOGNE CONTAINERS

RICHFORD PUSH-UP* GOLDEN METAL PURSE STICK CONTAINER

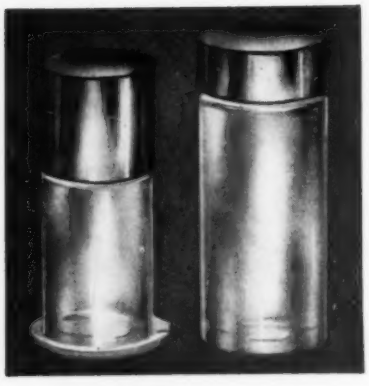
The container with the single push-up, push-back seal that permits direct filling without use of molds or foil. In 2 sizes. (Also available without push-up seal for ordinary use.)

RICHFORD STICK COLOGNE BOTTLES



FOR HOME USE

FOR THE PURSE



Write for Samples and Prices

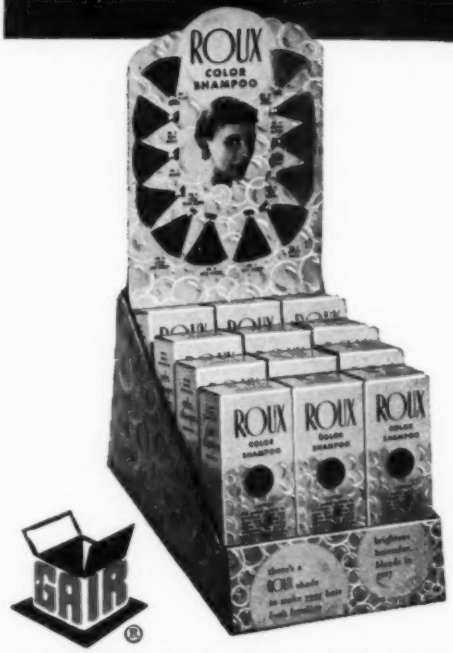
*TRADE MARK

RICHFORD CORPORATION

251 FOURTH AVENUE, NEW YORK 10, N. Y.

COSMETICS

Sell on Sight!



IN DISTINCTIVE MULTICOLOR

GRAVURE

PACKAGING BY ROBERT GAIR

GRAVURE opens up a new field of packaging for the COSMETICS INDUSTRY. Multicolor reproduction of your products on cartons can now be produced with the utmost delicacy, fidelity and realism. What a revelation when you discover your products SELL ON SIGHT in a GRAVURE multicolor carton.

WRITE TODAY *for samples and technical information.*

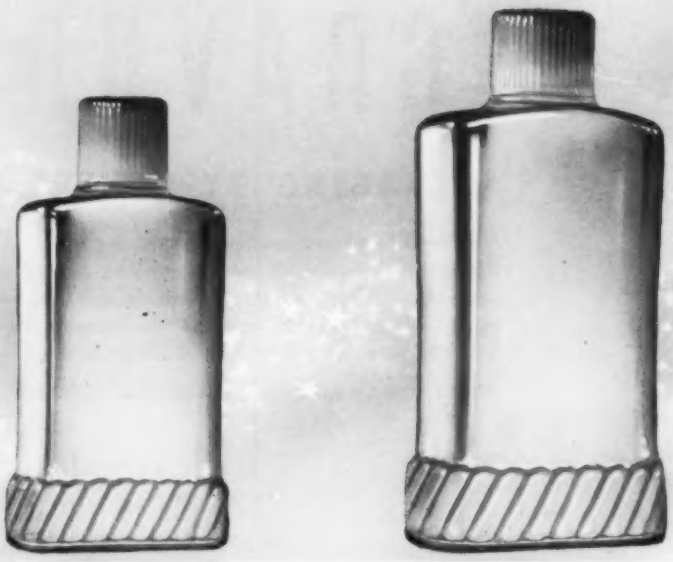
GAIR®

ROBERT GAIR COMPANY, INC. 155 EAST 44th ST., NEW YORK · TORONTO

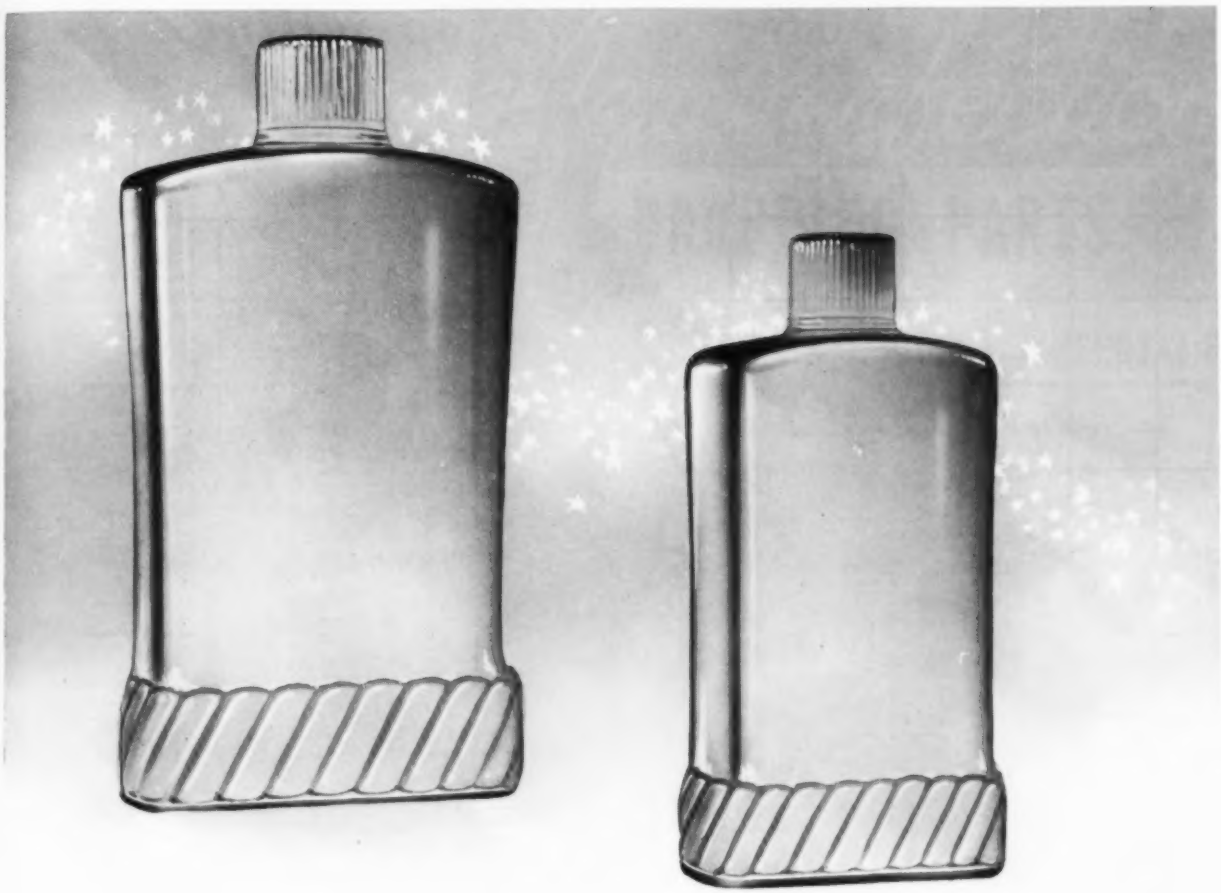
PAPERBOARD · FOLDING CARTONS · SHIPPING CONTAINERS

Announcing the *Contoure Line*

New Duraglas containers



Your product couldn't ask for more—
a *lovely-to-look-at* sales package
capped with a molded Empress closure.



to give your products a sales package that sparkles with beauty

THE NEW CONTOURE LINE is beautiful, different . . . combines Duraglas quality with the economies of stock-mold containers. One look tells you that these Duraglas containers offer a new, sparkling beauty in packaging. They have clean-cut, classical lines . . . hand-grip styling that's so popular with users . . . graceful shoulders for greater strength.

Notice, too, how practical they are . . . with broad label areas . . . solid bases for greater stability . . . design that permits high-speed packing line operation. The Contoure Line is available in 5 popular sizes—1-, 2-, 4-, 6- and 8-ounce.

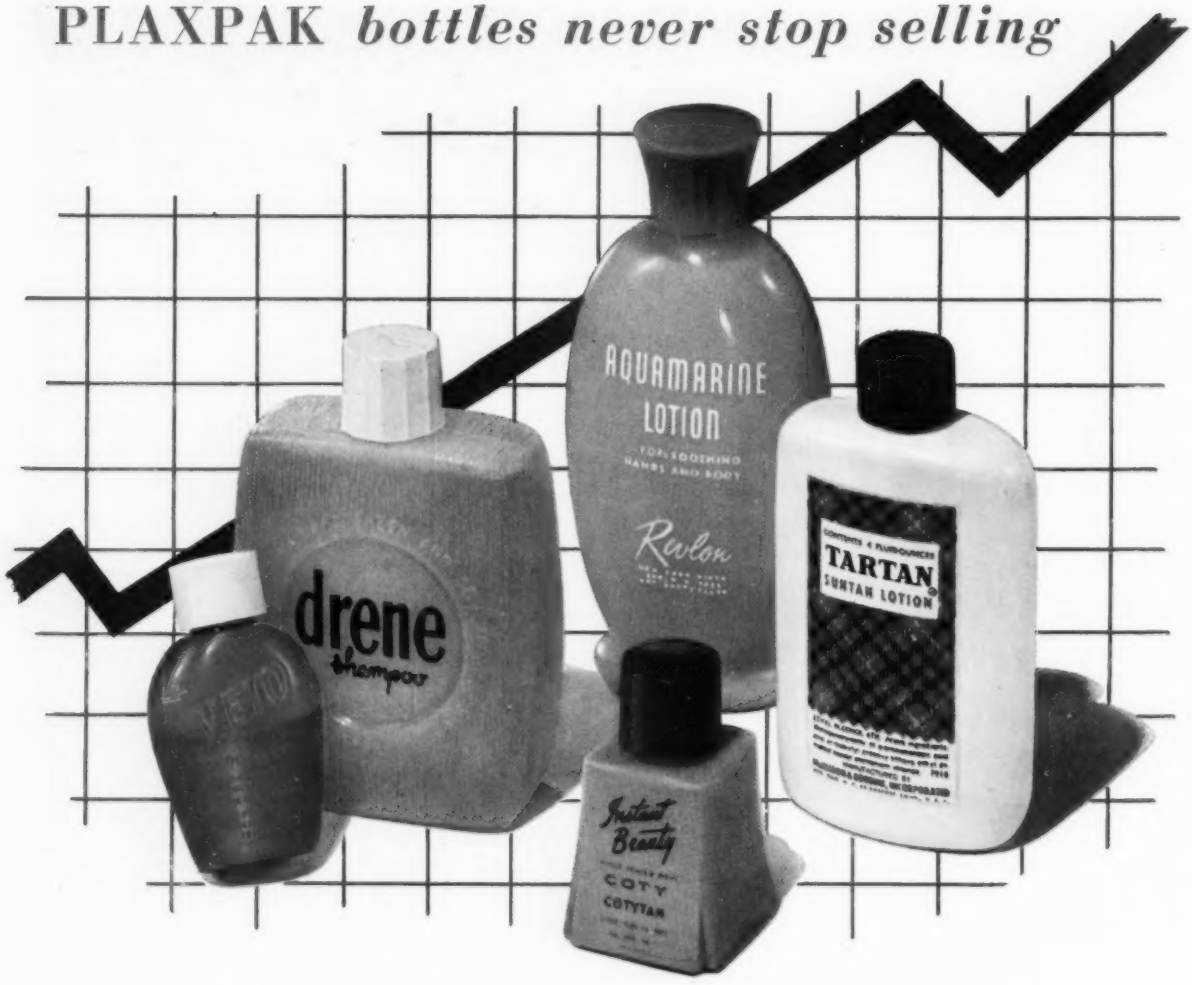
We invite your inquiry today for more information about this newest Owens-Illinois development, and how you can give your products the most exciting sales package they've ever had.

Duraglas CONTAINERS ARE PROTECTORS OF QUALITY

TRADE MARK REG. U.S. PAT. OFF.

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

PLAXPAK *bottles never stop selling*



...the products packaged in them

Pick up a product in a Plaxpak® bottle. Notice how much lighter it feels, how much more pleasant to handle than conventional containers. Here's touch appeal as well as eye appeal. Notice how much more at ease you are in using the product knowing that the bottle is smashproof and unbreakable.

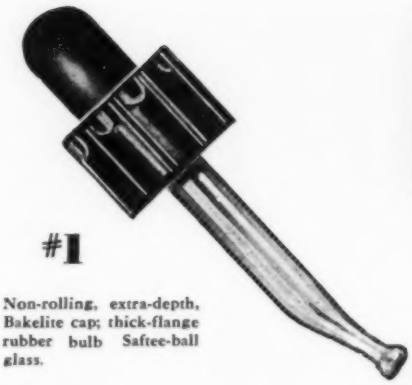
Now add the convenience of just squeezing the container to dispense the contents and you can see why Plaxpak bottles never stop selling the products packaged in them.

Here's packaging that gives consumers what they want most—convenience.

PLAX
FOR PLASTICS
NOT SUBSTITUTES—IMPROVEMENTS

PLAX CORPORATION Subsidiary of Emhart Mfg. Co. P.O. BOX 1019, HARTFORD 1, CONN.
In Canada, Plax Canada, Ltd., Toronto—Sales Offices: New York City, Chicago, San Francisco

Plax® blow-molded products made under U. S. Pats. 2126239, 2175053, 2175054, 2230180, 2230190, 2260750, 2283751, 2349176, 2349177, 2349178



#1

Non-rolling, extra-depth, Bakelite cap; thick-flange rubber bulb Saftee-ball glass.

New Perfection

DROPPING PARTS

Protect YOUR PRODUCT'S REPUTATION

Your product's hard-won reputation is risked every time it is taken from the medicine chest. Any inconvenience, such as a non-functioning dropper, will be permanently associated with it. You can remove this risk by entrusting your carefully-compounded preparation to New Perfection dropping parts—painstakingly made of quality materials for the utmost in dependability and cleanliness.

✸ ***We can supply dropping parts to fit your bottles or furnish complete with our own bottles.***

#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

#4

Metal cap; AMEKINE oil-resisting synthetic rubber bulb; blunt glass.

Improved bottle shape. Designed to lie flat for convenient labeling. Front provides ample label space.

RUBBER BULBS

are supplied in many styles and colors. Oil-resisting AMEKINE synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS

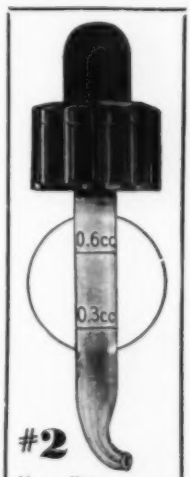
of plastic or metal, can be furnished in a complete range of sizes and colors.

DROPPER GLASSES

are available in a wide variety of styles and sizes. Plain or CALIBRATED in any color to mark specific dosages.

BOTTLES

in an attractive modernistic style in Amber, Blue, Green or Clear glass, are available, complete with dropping parts, in the following sizes: 2cc, ⅛, ¼, ½, 1 and 2 oz.



#2

Non-rolling extra-depth Bakelite cap; thick flange rubber bulb; CALIBRATED special bent glass.

Write for Samples and Quotations

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

Photo courtesy William R. Warner Division of Warner-Hudnut, Inc.

Custom Protection

—the safe, smart way to package pharmaceuticals

Shock, vibration, moisture . . . *all* of these hazards cause great losses to manufacturers each year. Yet many companies—making many varieties of pharmaceuticals—have found the change to *custom protection* with Kimberly-Clark Interior Packaging—KIMPAK,* results in faster, more streamlined packaging operations, and a virtual end to product damage in transit. KIMPAK is soft, highly comformable, and easy to apply as wrapping paper. It will absorb up to 16 times its own weight in moisture within 30 seconds, and is widely used as absorbent packaging material in mailing liquid samples to physicians. Regardless of whether you package pills, tablets, capsules—liquids in bottles, jars, tubes, vials or ampoules—KIMPAK can be "tailored" to your particular needs. For information, write to Kimberly-Clark Corporation, Dept. J-6, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

A Product of **Kimberly-Clark**

*REG. U. S. & FOREIGN COUNTRIES

There are 8 sizes in our L-33 line of machine made, flint glass bottles. The smallest is 1/2 ounce . . . the largest 16 ounces. They can be supplied plain or decorated to your specifications with fired-on ceramic labels.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: 1572 MERCHANDISE MART

KEEP YOUR POWDER DRY

in handsome Continental containers

To keep your powder fresh, there's nothing better than Continental metal containers.

They seal out moisture, air, and light, and guard the quality of a powder right down to the last grain. They're light in the hand and plenty strong.

We make powder cans in many sizes and shapes with dispensing heads of every kind. And we know how to protect the effectiveness of all manner of foot powders, bath powders, tooth powders, and baby powders. Our designers are masters at giving these sturdy packages sales-winning appeal; our lithography makes them sing. For more details, just give us a call.

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CONTINENTAL CAN BUILDING • 100 East 42nd St., New York 17, N. Y.

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Watch out honey...that's POISON IVY!

You'd better run and get mommy to wash your hands and arms off good . . . then, Belmont Laboratories says, rub Mazon on them. And they ought to know for they have sold it for many years as an aid in treating poison ivy and other skin irritations.

Belmont Laboratories Co., of Philadelphia, Pa., manufacturers of Mazon, use Crown Lug Caps as closures for this product. These caps effectively protect the product from deterioration through exposure to the air. And, as in all Crown Closures, the liner materials have been scientifically selected to answer the specific sealing needs of the product.

When selecting closures for your products, take advantage of Crown's Customer Service . . . there's no cost or obligation involved. Crown Cork & Seal Company, Baltimore 3, Maryland. *World's Largest Makers of Metal Closures.*

CROWN CLOSURES

Approved by millions of housewives

What qualities do you want in your Magnesium Oxide and Carbonate?

How many of these qualities are vitally important to you? You get all seven—when you buy Baker's Magnesium Oxide and Carbonate.

If you react Magnesium Oxide or Magnesium Carbonate chemically, or if your final product must meet predetermined specifications, you will be interested in Baker's measured purity typified by the low iron and calcium content of these two fine chemicals.

If you formulate either of these compounds into dry or wet mixtures, the controlled particle size and density will enable you to achieve a uniform final product. This helps to simplify both your manufacturing and packaging problems.

Baker's protective packaging assures you that these chemicals will arrive at your point of use in good condition. Long experience in cooperating with users of Baker's Magnesium Oxide and Carbonate indicates that all seven of Baker's features are both important and essential.

So write for free testing samples and make your comparison. We will gladly quote prices. Address: J. T. Baker Chemical Co., *Executive Offices,* Phillipsburg, New Jersey.

Baker CHEMICAL

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REAGENT • FINE • INDUSTRIAL

News . . .

Folsom with Medical Economics

Joseph Paul Folsom on June 1 was appointed general manager of Physician's Desk Reference to Pharmaceutical Specialties and Biologicals by Medical Economics, Inc. He had previously been affiliated with Lederle Laboratories for 23 years, serving until recently as general sales manager. In 1951 Mr. Folsom represented the drug industry as branch chief of the Drug and Cosmetic section of the Rubber, Chemical & Drug division of the Office of Price Stabilization, under T. H. McCormick.

JOSEPH P. FOLSOM

Barr to Become Private Label Firm

G. Barr & Co., Chicago manufacturing chemists, have announced the sale of all their own brand products to a new corporation headed by Jerry Michell, Barr general sales manager. The sale became effective June 1. These brands include Balm Barr Lotion, Balm Barr Cream Shampoo, Protomone Hormone Cream, Buckeye Corn Salve and the entire line of Coronet and Joyce shoe polishes.

Mr. Michell resigned from G. Barr & Co. to head the new company and continue in the promotion and sale of these brands.

Reason for the move, according to Mr. Barr, was to enable G. Barr & Co. to devote all of its efforts to private label manufacturing.

Wyluda, D&O Boston Branch Mgr.

Dodge & Olcott, Inc. moved their Boston sales office on June 1 to Park Square Building, Room 428-B, Boston 16. At the same time, Edward J. Wyluda was appointed branch manager, succeeding Francis Joseph McCarthy, who died April 21.

Owens Appointed by Plough

Gerald T. Owens, formerly national sales manager of Eversharp, Inc., has been appointed to the newly created position of assistant to the president of Plough, Inc., according to President Abe Plough.

Carter Receives Abbott Citation

Edgar B. Carter, executive director of research for Abbott Laboratories, was presented with a special citation from the Abbott research division by Dr. Ernest H. Volwiler, president and general manager, on the occasion of his retirement after 37 years of service. The ceremony took place at the annual dinner of the Abbott research, development and control departments.

Edgar B. Carter, left, executive director of Research for Abbott Labs., receiving special citation from research division by Dr. Ernest H. Volwiler, president and general manager, on his retirement after 37 years.

Capkovitz Heads Colgate Perfumery

Stephen G. Capkovitz has been appointed head of the perfumery division of the Colgate-Palmolive-Peet Company's research and development department. He had formerly been chief chemist and perfumer for three Vick Chemical Co. subsidiaries, Prince Matchabelli, Seaforth, and the Sofskin Co.

Visit Sheffield Tube Corp.

One Canadian and three British collapsible tube manufacturers recently visited Sheffield Tube Corp. in New London, Conn., according to L. Tracy Sheffield, who served as host. The guests from England included W. S. H. Betts, Betts & Co., Ltd.; and two representatives of John Dale, Ltd., A. T. Coote, assistant general manager; and F. T. Gerson, research and development division. The Canadian representative was Charles D. Hill, president of Modern Containers, Ltd.

Pharm. Advg. Club Formed

A Midwest Pharmaceutical Advertising Club was recently formed in Chicago, with the following officers elected: president, W. Burton Lord, J. B. Roerig & Co.; vice-president, M. M. Dalby, Irwin, Neisler & Co.; treasurer, Edward L. Miles, Ames Co., Inc.; Secretary, R. Blayne McCurry, Abbott Laboratories. The board of governors of the club includes Chas. S. Downs, Abbott Laboratories; Thomas R. Gardiner, American Medical Association; L. G. Maison, L. G. Maison & Co.; Franklin P. Obrien, G. D. Searle & Co., and Harry C. Phibbs, Harry C. Phibbs Advertising Co.

Milton G. Peterson was appointed chairman of the public relations committee.

RUSSEL ROOKS

Rooks Elected Avon Director

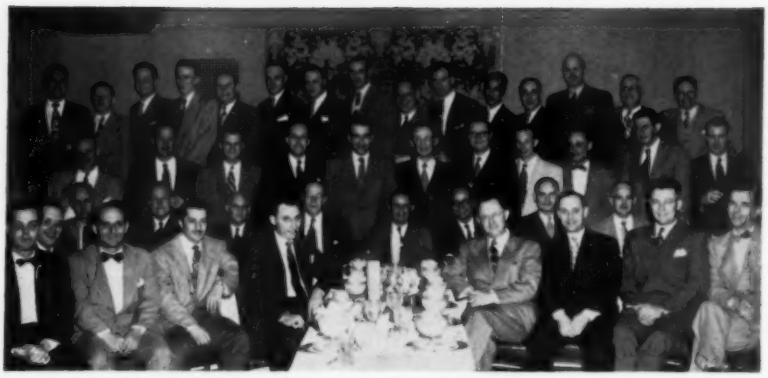
Russel Rooks, vice-president and general manager of Avon Products, Inc., was elected to the board of directors of that company at the annual stockholders meeting on May 22, according to W. Van Allan Clark, chairman of the board. Mr. Rooks, associated with Avon for 26 years, began his career with the company in Kansas City. He was recently made a director of the Fragrance Foundation.

Eaton Expands Professional Staff

Eaton Laboratories, Inc., has expanded its professional staff by the following appointments: Paul F. McLeod, M.D., George S. Rogers, M.D. and Harold D. B. Roberts, V.M.D. to assist Dr. L. Eugene Daily, medical director, in the enlarged medical program; Michael P. Natt, Melvin J. Bryson and Americo Woyciesjes, to accelerate the research program under the direction of Dr. W. B. Stillman, research director; Meta P. Newman, to assist Dr. Rolland J. Main, medical editor; and John J. Chadwick, to assist J. D. Hayes, general counsel.

Givaudan Sales Meeting

The entire sales staff of Givaudan-Delawanna Inc., together with personnel of its other divisions, held the annual sales meeting at the Hotel Berkeley-Carteret at Asbury Park, N. J., from April 17 to 20. Ernest R. Durrer, executive vice-president, gave the opening address of the meeting which was then presided over by J. H. R. Stephenson, sales manager. The sessions were ended on April 18 with a banquet, during which Dr. Eric C. Kunz, president, delivered an address and presented a gold watch to Dudley Lum, Chicago Manager, in honor of his twenty-five years with the company.



Sales staff of Givaudan-Delawanna and personnel of other divisions attending annual sales meeting at Hotel Berkeley-Carteret, Asbury Park, N.J., in April. First row, seated, G. H. Cadgene, F. Eichel, V. DiGiacomo, E. Schweizer, F. Wegman, W. Wisse, R. L. Williams, and R. Penfield, Jr. 2nd row: S. Rutowski, G. M. Warren, J. H. R. Stephenson, R. M. Stevenson, D. F. Lum, E. C. Kunz, E. R. Durrer, M. Luthy and R. E. Horsey. 1st row standing: H. L. Shaftoe, Ben Cottle, M. Lazorchak, P. Bouillette, E. R. van Liew, P. Adams, H. Kessler, R. E. Vicklund, L. L. Lowden, W. A. Gump, G. H. Blake. 2nd row: F. Millo, T. Bumiller, T. W. Shedd, E. Merwin, W. Tomzak, C. W. Allen, M. J. Prior, R. J. McKeefery, G. Tanner, R. C. Morgan, E. Kung, W. Wynne, A. F. Breeze, E. P. Nicholson and C. Jensen. The meeting was presided over by Mr. Stephenson, Givaudan sales manager.

Feeley Promoted by Lueders

Paul L. Cooley has resigned as Pacific Coast Branch manager of George Lueders & Co. and has been succeeded by William J. Feeley. Mr. Cooley had been associated with the company over 20 years.

Mr. Feeley, who has been with the company 14 years, has been attached to the New York headquarters, spending half his time on inside work, and for several years acting as salesman in the Metropolitan areas and in various cities.

WILLIAM J. FEELEY

Hunt, Mgr. Breon Division Office

Lawrence T. Hunt has been appointed manager of the San Francisco divisional office of Breon & Co., according to Frederick O. S. Spencer, vice-president in charge of sales. He will maintain division headquarters at 349 Ninth St. in that city, and will direct sales activities of the firm's medicinal preparations which are distributed to physicians, hospitals and the retail and wholesale drug trade.

He will be assisted by George De Haven, who will operate from headquarters at 5302 Greenlake Ways, Seattle.

Zahn Appointed by Abbott

Fred J. Zahn, a salesman for Abbott Laboratories, has been appointed to the promotional service division, according to H. S. Wilkinson, director of sales. His headquarters will be in the home office in North Chicago, and his work will include liaison work among the sales, research and medical departments.

FRED J. ZAHN

Hull, Mallinckrodt Sales Rep.

John W. Hull has been appointed sales representative of Mallinckrodt Chemical Works, with headquarters in Dallas. He will service all the accounts formerly handled by W. K. Dowd, who has resigned.

Maas Moves to Cleveland

A. Stanley Maas, Midwest representative of Felton Chemical Co., Inc., recently moved from Toledo to Cleveland to be more centrally located to service customers in the Ohio, Indiana and Michigan areas.

Sterwin Sales Conference

Sales representatives of Sterwin Chemicals Inc., subsidiary of Sterling Drug Inc., met at the Westchester Country Club, Rye, N. Y., from May 1 to 4 for the annual four-day conference to discuss sales activities for the coming year.

The climax of the meeting was a banquet for the national sales force which was attended by all company officials and top Sterling executives. James Hill, Jr., chairman and president, and Dr. J. Mark Hiebert, executive vice-president, represented the parent company. Also present were Dr. Theodore G. Klumpp and Joseph G. Noh, president and vice-president in charge of sales, respectively, of Winthrop-Stearns Inc.

P. Val Kolb, president, keynoted the 1952 Sterwin sales program with a talk on "An Informed Salesman is a Better Salesman." Officials in addition to Mr. Kolb who led discussion panels were William X. Clark, sales manager; Dr. R. C. Sherwood, technical director; Robert Whiteside, Kenneth Leggett and Warren Keller, assistant technical directors; Edward Hassler and Keith Baldwin, assistant sales manager; and Jack Revord, manager of the Chicago sales office. Sales representatives attending the conference included Steele Sherratt, Michael Padley, L. R. Patton, Gordon Weed, Dan Smith, Jack Bozman, William Edmonds, Lyle Carmony, Peter Metcalf, N. J. Stromstad, Richard Meyers, L. L. McAnnich, James Doty, Lee Soklich, Paul Callison and Gene Noe.

Faithfully recreates the fragrance of
the living flower—a substitute for the Absolute at a savings
Rosan
ROSE DE MAI SYNTHETIC
by Albert Verley & Company, Inc.

Albert Verley & Company's

Rosam

. . . a worthy substitute for the costly natural Absolute

Rosam is a remarkable achievement in synthesis. It has won a permanent place for itself in all forms of perfumery as a complete substitute for Absolute Rose de Mai. You can use it in your most significant formulas — alone or in combination with the natural product, without excessive cost burden — and with confidence that results are a credit to your perfumes and your prestige. Its price is just $25.00 a pound — especially noteworthy now, in view of the continuing high cost of Rose Absolutes, particularly Bulgarian Otto of Rose.

We suggest that you experiment with Rosam. Appraise its possibilities in your present compounds, or the new one you are now creating. Write today for working samples.

ALBERT VERLEY AND CO., INC.
466-472 W. Superior St., Chicago 10, Ill.
114-116 E. 25th St., New York 10, N. Y.

MEFFORD CHEMICAL CO.
1026 Santa Fe Ave., Los Angeles 21, Calif.

ALBERT VERLEY AND CO., INC.
222 Front St., East, Toronto, Ontario

Representatives in all principal cities throughout the world.

Where Your Dollars Have More Scents

Albert Verley

AND COMPANY, Inc.

Headquarters for Odor Appeal

Synthetic Aromatic Products and Organic Isolates • Synthetic Flower Oils and Aromatic Bases • Bouquets and Finished Compositions.

Dr. Nelson Leaves FDA

Dr. Erwin E. Nelson, medical director of the Food and Drug Administration of the Federal Security Agency, resigned May 15, according to Commissioner of Food and Drugs Charles W. Crawford. Dr. Nelson will leave the service on August 1 to become professor and director of the department of Pharmacology of St. Louis University School of Medicine.

He was on leave of absence as Associate Professor of Pharmacology at the Medical School of the University of Michigan when he began working with the FDA in 1934 to establish the division of Pharmacology. He later returned to the University as Professor of Pharmacology and in 1937 became head of that department at Tulane University. From 1943 until 1946, Dr. Nelson was director of the Wellcome Research Laboratories. He served as chief of the New-Drug section of the FDA's Division of Medicine from 1947 until 1950, when he became medical director.

Ciba Receives Building Citation

Ciba Pharmaceutical Products, Inc. was awarded a citation for its new pharmaceutical production building completed last year, by the editors of *Factory Management and Maintenance Magazine*. The editors cited the Ciba plant as "a striking, yet highly functional example of modern plant building, a credit to the high standards of the pharmaceutical industry and to its community."

The award followed selection of the Ciba building for review by *Factory* in its Eighteenth Annual Plant Buildings Issue. Ciba was one of seven firms chosen, from among 500 new major industrial plants, to receive this award. The citation was presented to Walter P. Bluntschli, vice-president in charge of plant service, on April 18, by Eugene McGarvey, the magazine's representative in the New Jersey area. It will be hung in the lobby of the new pharmaceutical production building.

New Branch Office for Abbott

Abbott Laboratories is constructing a one-story brick and steel branch office building in Teterboro, N.J., which will be ready for occupancy this fall. Providing 26,000 square feet of office and warehouse space, the new structure will replace the present branch office building at 211 West 14th St., New York City. E. L. Shattuck is the branch manager, and W. H. Scheigert, office manager.

Elected by Library Ass'n

Alberta Brown, Librarian of the Upjohn Co., has been elected vice-chairman and chairman-elect of the Science-Technology division of the Special Libraries Association. This group, founded in 1909, having a membership of 2,100, is an international organization of librarians and information experts who serve organizations in various fields. Miss Brown took office during the week of May 24 at the 1952 association meeting.

Polk, Northam Warren Director

Robert L. Polk, vice-president in charge of the export division, has been elected a member of the board of directors of the Northam Warren Corp.

Thomson Honored by Cos. Chemists

J. L. Thomson, head of Cosmetic and Color section, Food & Drug division, department of National Health & Welfare, Ottawa, Canada, received an honorary membership at the May 15 meeting of the Society of Cosmetic Chemists. The presentation was made by Dr. S. D. Gershon, president of the Society.

Dr. S. D. Gershon (right), president, Society of Cosmetic Chemists, presenting honorary membership to J. L. Thomson, head of Cosmetic and Color section, Food & Drug division, department of National Health & Welfare, Ottawa, Canada at May meeting.

Pfizer Promotions

Charles Kapp, formerly manager of the San Francisco district, Chas. Pfizer & Co., Inc., has been appointed western regional manager in charge of antibiotic sales operations in California, North and South Dakota, Montana, Utah, Wyoming, Colorado, and western Nebraska. Kenneth Gronek has become manager of the Denver district, including six western states. He had previously been a Pfizer special hospital representative in Chicago.

Joseph R. Mallon, who has been representing the company in the Philadelphia area, has been promoted to manager of that district.

Walter E. Smith has been named manager of the newly created Birmingham, district, and Harold Krauss has become a Pfizer special hospital representative in New York.

Harvey H. Ashmead has been appointed field manager of the division's veterinary department; Burnett Maisel, formerly professional service representative in New York City, has become manager of the Seattle district; John W. Murphey has become the new manager of the Kansas City district; Frederick D. Wyllie has been appointed manager of the antibiotic sales district comprising northern California and Utah; and Joseph A. Vevoda has been promoted from professional service representative to special hospital representative in the San Francisco area.

Dr. Brown Joins Armour Labs.

Robert L. Brown, M.D. has joined the medical consultant service of the Armour Laboratories as an assistant medical director. He had prevously been on duty in the Army Surgeon General's office, assigned to the Armed Service Medical Material Standardization Committee.

Portion of speakers who addressed Society of Cosmetic Chemists at May 15 meeting in New York. Left to right: Dr. James H. Baker, program chairman; Dr. G. F. Reddish; Dr. D. S. Gershon, Society president; W. E. Botwright; C. Pacifico; and Dr. M. G. Mulinos.

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Bristol 25-Year Club Meeting

The Quarter Century Club of Bristol-Myers Co. held its eighth annual meeting at the Gotham Hotel, New York, last month, with forty-five of the fifty-five members present. Chairman of the board, Henry P. Bristol, who ranks as the employee with the greatest number of years of active service, was in Europe. Among those present were President Lee H. Bristol, who presented the new members with a certificate of membership and a check, and executive vice-president William M. Bristol, Jr.

Eighth annual meeting of Bristol-Myers' Quarter Century Club, at Gotham Hotel, N. Y. President Lee H. Bristol presented new members with certificate of membership and check.

Steinfeld, Ass't Treasurer

Charles C. Steinfeld has been appointed assistant treasurer of Strong Cobb & Co., Inc., in charge of the new West Coast office at Hawthorne, California, according to George Miller, president.

CHARLES C. STEINFELD

Neulinger, Croda Sales Rep.

Kurt F. Neulinger has been appointed sales representative of Croda, Inc., for New York and New Jersey, including the Metropolitan area. He had formerly been sales representative in Czechoslovakia for Croda's English associates, Croda, Ltd.

JOHN J. SCANNELL

A. H. Robins Grant for PABA Study

A. H. Robins Co., Inc., has made a three-year grant of $3,500 a year to St. Luke's Convalescent Hospital at Greenwich, Conn. for expanding a program of clinical research in rheumatic disease, according to Dr. William R. Bond, clinical research director of the company. Clinical results obtained with para-aminobenzoic acid and salicylates (Pabalate, Robins) will be studied in cases coming through the pediatric and adult medical services of St. Luke's Hospital, New York, and the rheumatic disease service at its convalescent branch in Greenwich. Results will also be compared with those obtained from treatment with ACTH.

Dr. R. A. Higgons, director of convalescent research, and Dr. Anthona A. Albanese, chief of nutritional research, will head the study.

Sonneborn Appointments

I. Silverman, former assistant manager of the Nutley, N. J. factory of L. Sonneborn Sons, Inc., has been appointed factory manager. H. Riess has become ssaistant factory manager, and A. Moscowitz, chief chemist. These appointments were made, following the recent deaths of P. Dettelbach, former factory manager, and J. M. Kroth, former manufacturing supervisor.

Srigley Promoted by Parke, Davis

Russell R. Srigley, who joined Parke, Davis & Co. in 1917 as a rate clerk in the traffic department, has been promoted to traffic manager of the company, and will have general supervision of all company traffic and transportation, both domestic and foreign. He succeeds Leon J. Armstrong, who died of a heart attack on April 23. R. C. Turpening has been chosen as assistant traffic manager.

Scannell, J. T. Baker Traffic Mgr.

John J. Scannell, an Interstate Commerce Commission practitioner, has joined the J. T. Baker Chemical Co. as traffic manager, according to Ralph S. Lamie, plant superintendent.

Lakeside Issues Diuretic Review

Lakeside Laboratories has mailed the first issue of the *Diuretic Review*, a new monthly bulletin to physicians, and the only publication devoted solely to the field of diuresis, according to Evan P. Helfaer, president. Copies may be obtained by writing to: Diuretic Review, 53 East 51st St., New York 22.

Wood Named to CSC Sales Post

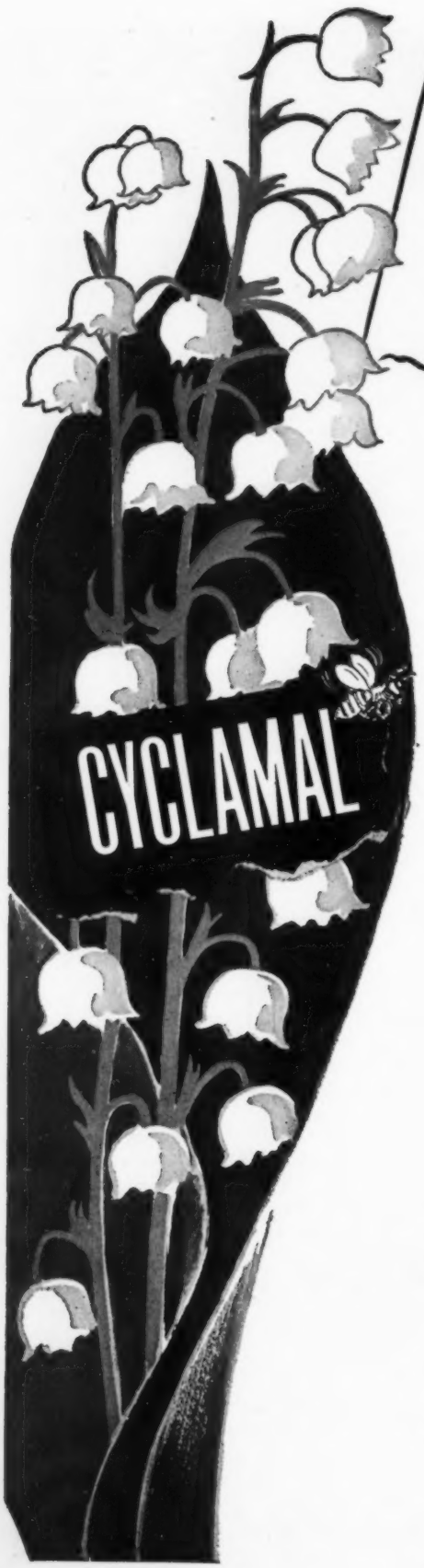
Richard C. Wood has been named assistant to Abbott K. Hamilton, vice-president in charge of product divisions of Commercial Solvents Corp.

Edco Fragrance Established

Ellis Davidson Co., Inc. has transferred its fragrance business to David Gritz and Harold M. Suss, known in the trade as the principals of Cosmetest, Inc. They have organized a new corporation Edco Fragrance, Inc., for the distribution their products, Edco Fragrance and Fragranceers products for fragrance in the home, and will subsequently announce plans for the promotion of these items. The factory and sales offices of Edco Fragrance, Inc. are located at 252 Norman Ave., Brooklyn 22.

Mr. and Mrs. Kole in Europe

Mr. and Mrs. Lessing L. Kole sailed last month on the Queen Elizabeth for a continental trip to England, Italy, Switzerland and France. They plan to spend quite some time at Kolmar-Europe, the Paris plant, and will visit Grasse and other parts of that country.



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No irritation or discoloration from this outstanding product!

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Resinoides • Essential Oils • Natural Absolutes

AROMATICS **VERONA** DIVISION

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Hagelin Named Fujisawa Agent

Roy W. Hagelin has been appointed sole agent to manage the purchases and sales in the United States for the Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan. This arrangement was completed by Tomokichi Fujisawa, president, during his visit to this country last month.

ROY W. HAGELIN

Lauter Named Bostwick Sales Mgr.

Jack S. Lauter has been appointed western sales manager of Bostwick Laboratories, Inc., and will supervise all Bostwick sales activities west of the Mississippi River, with particular emphasis on the West Coast area. He had formerly been western sales manager of the Michigan Chemical Co.

Felton Moves Chicago Office

Felton Chemical Co., Inc. has moved its Chicago offices to new and larger quarters at 325 West Huron St., a modern building with two thousand square feet of floor space. It incorporates laboratory and warehouse facilities, a stock and shipping center, and offices for the firm's Midwest representatives, Murray Hartstein and Robert I. Burke.

"Brand Name" Druggists Honored

The 1951 drug-store winners of Brand Names Foundation awards for distinguished service in the distribution of brand-name products were recently honored with a luncheon by officials of Sterling Drug Inc. at the Stork Club in New York. The luncheon guests included the "Brand Name Retailer of the year" for drug stores, Mrs. Nellie Davis Mandrup-Poulen, owner of the Nellie Davis Pharmacy, Roya Oak, Michigan, and a "Certificate of Distinction" winner, Richard L. Pedrick, advertising manager, Ropes Drug Store, Salem, Massachusetts.

Ellis Becomes V.P., CSC

Sydney T. Ellis has been named a vice-president of Commercial Solvents Corp., according to J. Albert Woods, president, and will be principally responsible for the company's expansion and development program. During the past year he served as assistant to the president; this will continue.

SYDNEY T. ELLIS

Emery Fellowship Established

Emery Industries, Inc. has established a research fellowship in the Graduate School of Applied Science of the University of Cincinnati, with J. D. Fitzpatrick, who joined the company in 1935, becoming the first fellow under the grant. He will continue work he has carried on since 1943 when he became the first manager of Emery's new chemical research department. Dr. Charles G. Goebel, with Emery since 1943, succeeds Mr. Fitzpatrick as head of this department.

Howell Promoted by Parke, Davis

Walter A. Howell has been promoted from assistant to the superintendent of production planning to superintendent of the planning and distribution division at Parke, Davis & Co., according to Dr. Harvey M. Merker, director of inventory control. He will be responsible for the planning functions in the Detroit and Holland, Mich. plants for the distribution of more than 1,000 Parke-Davis products to the 30 branches in the United States, and to Canada and Panama.

Mr. Howell started as a bottle washer in the ampoule department in 1934. He took night courses at Wayne University and graduated in 1938 with a bachelor of science degree.

Meade Promoted by Lever Brothers

Henry J. Meade has been appointed a buyer of perfumery and flavoring materials by Lever Brothers Co. He joined the company in 1943 as a laboratory technician in the Harriet Hubbard Ayer cosmetic division and since 1949 has been head of quality control at Ayer's Long Island City plant.

Whittaker Distributes Loomis Talc

The W. H. Loomis Talc Corp. and Whittaker, Clark & Daniels, Inc., have jointly announced that Whittaker will handle Loomis Fibrous Talc in Massachusetts, Rhode Island, Connecticut, New Jersey and the southern part of New York. Whittaker stocks the product in their South Kearny, N. J., plant at all times for prompt shipment.

Luncheon given by officials of Sterling Drug Inc. in honor of 1951 drug-store winners of Brand Names Foundation awards. Left to right: Harvey M. Manss, vice-president, Sterling Drug, in charge of Bayer division; Earl I. McClintock, vice-president, Sterling; Mrs. Richard L. Pedrick; John E. Mulhern, treasurer, Sterling; Mr. Mandrup-Poulsen; Dr. J. Mark Hiebert, executive vice-president, Sterling; Mr. Pedrick; Sidney C. Mills, vice-president, Winthrop-Stearns; Mrs. Mandrup-Poulsen; O. W. Ergenzinger, vice-president, Sterling, head of Chas. H. Phillips div.; and J. M. Hawkins, pres., Amer. Ferment Co.

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Medicinal Colloids • Methylene Disalicylic Acid
Neomycin • Paraformaldehyde
Parahydroxybenzoates • Penicillin
Pentaerythritols • Propyl Gallate • Resorcinol
Salicylates • Salicylic Acid • Streptomycin

Dr. Gershon Addresses Cos. Chemists

Dr. S. D. Gershon, research manager, Pepsodent division of Lever Brothers, spoke at the June meeting of the Chicago chapter of the Society of cosmetic Chemists. He discussed the need for a criticale valuation of scientifically controlled tests, designed to determine the effectiveness, beneficial and detrimental, of cosmetics and related products.

DR. S. D. GERSHON

Pessl Executives on Business Trip

Arnold Perlman, president, and Paul Blackman, sales manager, of Helene Pessl, Inc., are making extensive tours around the United States continuing through July. Mr. Blackman left May 18, and Mr. Perlman, the middle of June. Their chief topic of discussion with merchandise managers and buyers is the Little Lady Birthday Parties, and the plans to run the part as a 1952 Fall promotion.

Colgate Executive Elections

At the April meeting of the board of directors of Colgate-Palmolive-Peet Co., James A. Reilly was elected executive president of the soap department; William L. Sims II, executive vice-president in charge of the company's foreign department; and J. A. Straka, executive vice-president of the toilet articles department, according to E. H. Little, president. H. W. Reynolds, general counsel for Colgate, was elected a vice-president at the same time.

Foster with Einson-Freeman

Wallace Foster, former national advertising manager, *American Druggist*, has been appointed director of drug merchandising, Einson-Freeman Co., creative lithographers and manufac-turers of store and window displays, according to N. J. Leigh, chairman of the board.

Calco Pharm. Office in Phila.

Effective July 1, the Pharmaceutical department of Calco Chemical division, American Cyanamid Co., will open a regular office in Philadelphia at 401 North Broad Street (WAlnut 2-2080). W. W. Wiley, former manager of the St. Louis pharmaceutical office will become manager of the new office. He will be replaced in the St. Louis territory by Kenneth Whelan.

MILTON SAMUELS

Samuels Promoted by Lady Esther

Milton Samuels has been promoted to the post of general sales manager of Lady Esther, Ltd., according to Dr. Joseph Schultz, president.

Lady Esther Expansion

Lady Esther, Ltd. has announced plans for expanding their export activities in all foreign countries where dollars are available and which permit unrestricted importations, according to Dr. Joseph Schultz, who stated the company's foreign business will be handled exclusively by the Export Corp., Chicago.

Cleveland Drug & Chem. Elections

Bus A. Parker, Mallinckrodt Chemical Works, has been elected president of the Cleveland Drug & Chemical Club for the year 1952-1953. Other officers elected include Robert Langel, Marlo Products Co., vice-president; Ted Elliott, Elliott Sales Co.; and Sam Katz, Celloseal Co., treasurer. Named to the board of directors were: Thomas Chadwick, Chas. Pfizer & Co., Inc.; George Burke, Strong Cobb & Co., Inc.; Carl Fuller, Fuller Associates; Robert Gould, Bonne Bell Inc.; William Clark, Dobeckmun Co.; Charles Blazier, McKesson & Robbins Inc.; and Raymond Shamel, Mallinckrodt.

Atlas Enlarging Sales Coverage

Atlas Powder Co. has completed the first steps in a proposed widespread extension of the sales service of its industrial chemicals department. The changes are designed to provide better service for users of Atlas chemicals in New York, Illinois, Indiana, Michigan, Ohio and Kentucky.

Glen P. Roddey, working from Buffalo, will service customers in northern and western New York, while William A. Kessel will continue to operate from New York City. William I. Pontius has been assigned to the Chicago office, and John Slaton has been moved from Chicago to Cincinnati.

Barrett, Endo Med. Director

Dr. Edward A. Barrett has been appointed medical director of Endo Products Inc. He has been associated with Hoffmann-LaRoche, Inc., Roche-Organon, and Armour Laboratories.

Annual meeting of Chemical Sales Staff, Emery Industries, Inc., in Cincinnati, during the week of April 7. Left to right, seated: N. D. Armitage, W. J. Siemens, J. P. Clancy, W. T. Meinert, R. T. Hull, A. R. McDermott, L. J. Hadobas, R. A. Behrmann and V. W. Colby. Second Row: R. F. Brown, K. K. Boyd, J. M. Washburn, Jr., J. P. Kramer, R. J. Roberts, D. R. Eagleson, F. L. Ekstrand, N. F. Reinert, N. J. York and R. M. Geis. Third row: O. W. B'Hymer, N. A. Ruston, W. A. Colby, J. A. Funk, T. L. Reilling, L. F. Church, L. E. Francis, J. W. Ritz and A. C. Fusaro. Theme of meeting was "Better Service."

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Schimmel for Synthetics

Glucuronic Acid Production

Corn Products Refining Co. has started production of glucuronic acid (in the lactone form) at its newly completed plant at Argo, Illinois, the newest unit in the company's program of producing chemicals from corn. This plant will make glucuronolactone available in commercial quantities and will also reduce the high cost which has been associated with glucuronic acid production by older methods.

Dorland, Mgr., Eastern Office

Jack A. Dorland has been named manager of the Eastern office of the Dow Chemical Inter-American, Ltd., and Dow Chemical International, Ltd. The office will be temporarily located at 629 Grove St., Jersey City.

Join Abbott Patent Staff

William E. Dominick and Paul L. Ahern have joined the staff of the patent department of Abbott Laboratories, according to Dr. E. H. Volwiler, president and general manager.

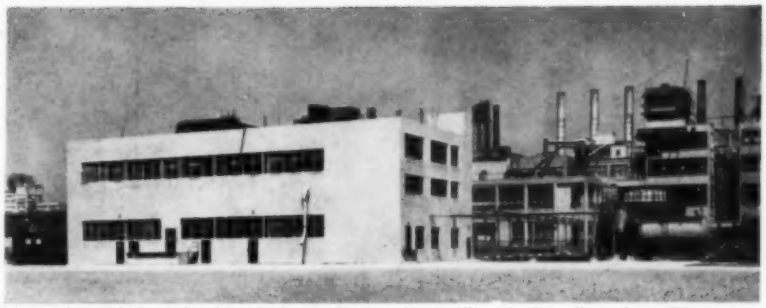
MAY WALLACE

Promoted by Matchabelli

May Wallace has been promoted to the position of supervisor of retail sales personnel, Prince Matchabelli, Inc., according to Owen Stoner, president.

Holloway Wins Schering Award

John Holloway, a second-year student at the College of Medical Evangelists, Loma Linda, California, was the second prizewinner of the Schering Award for 1951," annual competition among outstanding medical students in the United States and Canada. He was presented the $500 award by Franklin K. Johnson; western division manager of Schering. The topic of the prizewinning essay, "Steroid Hormones in the Treatment of Arthritis," was chosen by the Committee for the Schering Award.



New plant of Corn Products Refining Co. at Argo, Ill., which will produce Glucuronic acid. This plant is newest unit in company's program of producing chemicals from corn.

Bush Aromatics Div. Changes Name

Bush Aromatics, a division of the Dow Chemical Co., officially changed its name on June 1 to Aromatics division, The Dow Chemical Co. The change was made in order to facilitate the accounting and record-keeping of both Dow and its customers. No changes in production or sales personnel are contemplated. Dow has announced that, in conjunction with this change, new facilities for increasing aromatic production will go into operation at their Midland plant about July 1.

P. J. Coutin, left, vice-president, Roure Dupont, at dinner in his honor, marking 25th year with company. With him are Marion Tabor, treasurer, 27 years with company, and Clarence Long, 26 years. He was given a watch by Louis Amic, president, and gold cuff links by the Roure Dupont office staff.

Matheu Wins Pfizer Prize

John P. Matheu, manager of Chas. Pfizer & Co.'s Los Angeles antibiotic sales district, winning district in the first annual Pfizer President's Month contest, received the President's Trophy from John E. McKeen, president and chairman of the board, at a banquet held in Los Angeles on May 13. Thomas J. Winn, manager of the antibiotic division, presented wrist watches to all professional representatives in the district. These detailers had excelled representatives of the other 24 districts in antibiotic sales during March, the period selected for the contest. Mr. Matheu's trophy was a self-winning clock encased in glass.

Dow Research Director Appointed

Dr. R. H. Boundy, manager of the Dow Chemical Company's plastics department since 1945, has been named to head the firm's research activities, according to Leland I. Doan, president. C. B. Branch, manager of the technical service and development department, has replaced Mr. Boundy in the plastics department. John Van Horn, assistant manager of technical service and development for the past year, replaces Mr. Branch in his former position.

The new position of director of research supercedes a committee under which Dow research had been carried on since the death of Dr. Willard H. Dow in 1949. The existing executive research committee will disband, permitting its three members, Dr. W. R. Veazey, Dr. E. C. Britton and Dr. R. F. Boyer, to devote full time to their regular responsibilities.

Visits Sandoz Plant in U. S.

Dr. Ernst Rothlin, director of Sandoz Chemicals Corp., in charge of foreign operations for the pharmaceutical division, visted the United States last month to consult with the American Executives of the company and see the new plant at Hanover, N. J. He also visited Sandoz installations in Canada, Mexico and the South American countries.

Worpenberg with Emery 50 Years

Joseph Worpenberg is the first employee of Emery Industries to receive a diamond service pin in recognition of his 50 years of service with that company. Starting at the Ivorydale plant when thirteen years of age, Mr. Worpenberg for many of his earlier years worked side by side with his father.

He was presented with the pin by John J. Emery, president, at a special luncheon attended also by Arthur Schubert, vice-president; John Archiable, works manager; and Ray Brauer, personnel manager at the Ivorydale plant.

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Emery Expansion Program

Emery Industries, Inc. is carrying out an expansion program to insure better service to users of Emery fatty acids, Twitchell products and plasticizers. A. R. McDermott, formerly from the Chicago district officer, will assume the responsibility for all sales in Texas, Louisiana, Oklahoma and Arkansas. N. F. Reinert, with the development and service department, has been assigned to the Chicago office where he will work under D. R. Eagleson. F. L. Ekstrand has been assigned to the Philadelphia office and will cover eastern Pennsylvania and southern New Jersey; as well as parts of Philadelphia.

Ewald Heads N. Y. Fund Div.

John A. Ewald, president of Avon Products, Inc., has been appointed chairman of the Cosmetics, Drugs and Tobacco Group of the Greater New York Fund's 1952 campaign, according to Francis L. Whitmarsh, chairman of the Foods, Beverages and Consumer Goods section of the fund drive. George N. Graves, vice-president of Avon, is serving as assistant to the chairman.

Division chairmen of the three categories are: Mr. Ewald, cosmetics; George H. McGlynn, vice-president, Magnus, Mabee & Reynard, Inc., drugs; and Samuel J. Silberman, president, Consolidated Cigar Corp., tobacco.

Max Factor Receives Belgian Award

Max Factor Jr. was honored with the Cine-Revue Award of Belgium on May 29 for his "outstanding make-up contributions to the international motion picture industry," at the Award Dinner of the Hollywood Foreign Correspondents Association at Ciro's.

Joseph van Cottem, editor and publisher of Cine-Revue, Belgium's ranking film publication, flew to Hollywood to present awards to Mr. Factor, Cecil B. DeMille, and eleven film celebrities. Because of a previous business engagement, Mr. Factor had to be in New York at that time. Zsa Zsa Gabor received his reward on his behalf.

ARTHUR R. McDERMOTT

NORB. F. REINERT

FRED L. EKSTRAND

New Office Building for Lederle

Lederle Laboratories has begun construction on a new four-story office building at Pearl River, N. Y., which will be 80 feed deep and 300 feet long. It will provide working space for about 700 administrative personnel.

Dr. B. W. D. Carey, director of Laboratories, said the new building will house executive offices and a number of administrative, sales and service departments. Several sales offices in 30 Rockefeller Plaza, New York City, will also move to the new building.

New Givaudan Catalogue

Givaudan-Delawanna, Inc. has published its new 86-page catalogue of perfume and raw materials entitled, "Fragrance Is Your Business and Ours," which provides specific and conveniently arranged information on Givaudan products. It is divided into sections covering the different types of products, such as aromatics, specialties and basic materials. It has another department dealing with perfume problems in terms of various products, like creams, lotions, lipsticks, shampoos and bath preparations.

Promoted by Hazel-Atlas

C. R. Dilmore has been named purchasing agent of the Hazel-Atlas Glass Co., succeeding C. E. Ewing. He has been associated with the company since 1933, and in that department since 1942.

Join Evans Research

Louis D. Croce has joined Evans Research and Development Corp. as project group leader; Joseph P. Ferri, as a research chemist; and Marian V. Sullivan, as a member of the patent department.

Storfer in Europe

Benson Storfer, president of Parfums Corday, traveled to Europe last month to confer with French officials of the firm. He later flew to Israel to discuss the possibility of establishing a perfume industry in Tel Aviv.

Oskin Promoted by Westvaco

Donald C. Oskin has been promoted to assistant manager of sales by Westvaco Chemical division of Food Machinery and Chemical Corp. He replaces John deF. Meyler who has resigned.

Dr. Mast Named a V.P. by Nepera

Dr. George W. Mast, medical director of Nepera Chemical Co., has been appointed a vice-president in charge of the company's medical department and research laboratories, according to William S. Lasdon, president.

Bonfoey Appointed by Lenel Co.

L. L. Bonfoey, president of the St. Louis Toilet Goods Association, has been appointed midwestern sales manager of Lenel Co. in St. Louis.

Dr. Eugene Friedman

Dr. Eugene Friedman, associated with Polak's Frutal Works, Inc., for more than 25 years, died May 18. Prior to his retirement last year, he had been manager of the Chicago office.

William B. Stanger

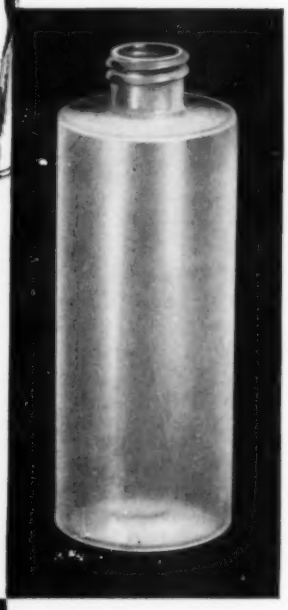
William B. Stanger, 43, vice-president of Seeley & Co. (Canada) Ltd., died on April 23. He had been with the company in Toronto since 1940 and was well known in the essential oil, flavoring and cosmetic industries in Canada.

He is survived by his mother and sister, and brother, Samuel, who is president of the Canadian firm.

switch to the packaging that has changed the nation's buying habits!

MILLS PLASTIC

BOTTLES



Mfd. under patents 2,515,093—2,579,390—2,579,399
Other pats. pend.

You can quickly see why MILLSPLASTIC bottles have hit the buying public with such habit-changing power.

Three words—lightweight, unbreakable, versatile—tell the story. They mean greater safety and usefulness for the consumer, reduced shipping, breakage and spoilage costs for the cosmetic, drug and chemical manufacturer. Industrial users find that aside from these general advantages MILLSPLASTIC bottles have properties which make them the best possible containers for acids and a variety of chemicals.

The superior design and quality of MILLSPLASTIC bottles is evident in our two standard styles, Mills "Cylinder" available in 2-4-6-8 oz. and quart and gallon sizes; Mills "Oblong" in 2-4 oz. size. Both styles come in natural Polyethylene or your favorite color.

We also custom design MILLSPLASTIC bottles in sizes, shapes and colors to meet your special needs. Atomizers, tubing and closures are available in standard styles or can be custom made.

Great as the impact of MILLSPLASTIC bottles has been, we don't believe that the surface of their usefulness and versatility has been scratched.

Your product may have a use that can blaze new trails of profit when packaged in MILLSPLASTIC bottles. Why not talk it over with us or our sales agents today.

ELMER E. MILLS CORPORATION
2930 NORTH ASHLAND AVENUE • CHICAGO 13, ILLINOIS

Sales agent for the United States:

W. BRAUN CO., CHICAGO: 300 N. Canal St. • **NEW YORK:** 715 Fifth Ave.
DETROIT: 139 W. Maple, Birmingham, Mich. • **ST. PAUL:** 2109 Village Lane

Management Forum

by Francis Chilson

INDUSTRIAL CONSULTANT

European Trip

In July and August of this year I expect to visit Europe. For me it will not altogether be a pleasure trip. I have work to do for clients in England, France Italy and Germany. Among other things I have been invited to address the British Proprietary Association. I shall stick strictly to American terms and usages. The last time I made a speech to a foreign, English speaking group, I scared hell out of them because I tried to show off my knowledge of Australian idiom. When it is realized that some Australian and British expressions mean the exact opposite of their meaning here, you can imagine that my speech was a humdinger. Particularly so since the audience was mixed. I shall spend quite a bit of time with Aspro of course and a fair amount with "Sir John" Walmsley who will be my mentor while I am in the British Isles. There will be little danger of roaming too far afield this time because I shall be accompanied by my own private FBI, Scotland Yard and Gestapo, namely: my wife and two daughters.

Definition of a Production Man

John A. Purinton Jr., G. D. Searle & Co., chairman of the Production and Engineering Section, American Drug Manufacturers Association, set forth the things the production or engineering man must do and be:

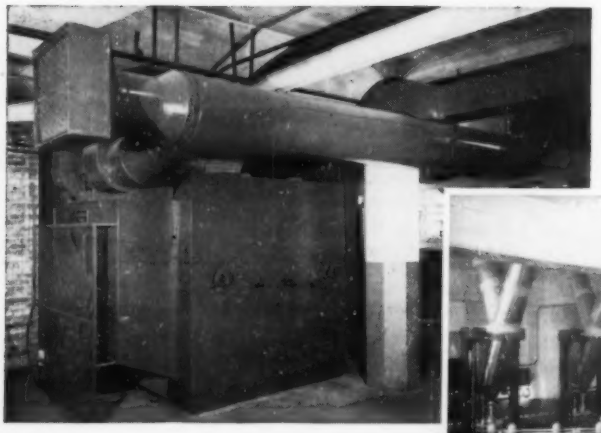
1. He must be well trained in the technical aspects of his work.
2. He must be understanding of others, both above and below him in the organizational ladder.
3. He must be able to communicate with others.
4. He must be able to appreciate and measure human effort, as he recognizes and measures the physical factors with which he has dealt in his strictly technical training.
5. He must have the ability to reach decisions and the ability to reach the majority of these decisions by agreement rather than the sheer exercise of authority.
6. He must have the ability to construct and operate an organization in which each of its component members can work efficiently, without friction, and with reasonable realization of his ambitions.
7. In turn, he must have the ability to fit his own group into the organizational structure of the company whole.
8. In accomplishing these and other responsibilities placed upon him, he must learn to increase his own personal efficiencies and to so order his business conduct that he may meet his overall requirements most effectively.
9. He must learn to live comfortably and effectively in his social, economic, and political environment.

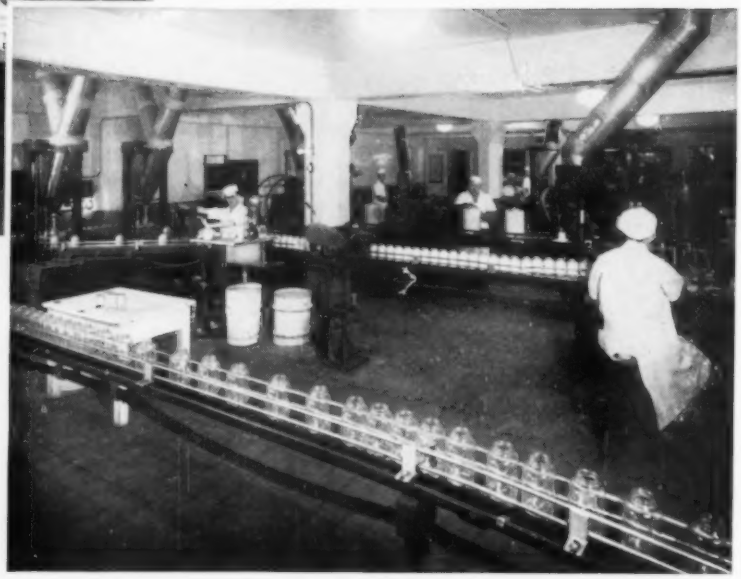
Eliminate Partitions

For the major part of factory operations partitions are useless, expensive and inflexible. I have said this many times before in discussions of factory layout. Now I am doing something about it, for in the design of a new plant on which I am working there will be no partitions at all excepting the firewall, required by law in the state where the plant will be built.

There is no reason in logic for walling in a series of manufacturing and packaging departments. Therefore in this new plant there will be one large manufacturing department comprising a series of subdivisions but all under one supervision, and there will be only one large packaging department where packaging of every type will be carried on. This packaging department will not be separated from the manufacturing department by means of a partition.

I know some of you are thinking of sterile filling rooms and others are thinking of dusty, smelly operations which by tradition always have been walled off and isolated. There may be a few isolated instances where the volume of obnoxious or difficult products made may be so low that it would not be economical to set up specially designed dust or fume control devices. But there are not many and partitions, even temporary ones are not cheap. The problem of dust and fume control is accentuated in small boxed off areas. If you break wind in a telephone booth the





The Lectrodryer holds this filling room below 50% relative humidity, so the malted milk powder is kept DRY.

When you say,

"Make mine a Horlick's malted..."

Horlick's malted milk powder flows freely from the dispenser, because it was packaged in a DRY atmosphere. Regardless of outside weather conditions in Racine, Wisconsin—any day in the year—this filling room has "winter-weather DRYness". A Lectrodryer* keeps it that way.

Supply DRY air to processing equipment, workrooms and storage areas and you speed production, while also preserving product quality. That's the experience of thousands of plants all over the world, in dozens of industries. Lectrodryers do that DRYing.

The book, "Because Moisture Isn't Pink" describing many of these installations, may be your key to ways of increasing your production. For a free copy, write Pittsburgh Lectrodryer Corporation, 309 32nd Street, Pittsburgh 30, Pennsylvania. Ask for Bulletin 216.

In England: Birlec, Limited, Tyburn Road, Erdington, Birmingham.
In Australia: Birlec, Limited, 51 Parramatta Road, Glebe, Sydney.
In France: Stein et Roubaix, 24 Rue Erlanger, Paris XVI.
In Belgium: S. A. Belge Stein et Roubaix, 320 Rue du Moulin, Bressoux-Liege.

LECTRODRYERS DRY WITH ACTIVATED ALUMINAS

LECTRODRYER

*REGISTERED TRADEMARK U.S. PAT. OFF.

result is awful but if you do so in the Grand Central Station nobody notices it—not even you.

As to sterile filling rooms a lot of rubbish is believed about how they should be designed. Most sterility techniques are traditional procedures inherited from the B.A.I. and the N.I.H. and were set up in the days when nobody knew anything about air sterility or air flow control. I am firmly of the opinion after examining hundreds of so-called sterile filling rooms that a better job of sterile filling could be done in large open areas properly designed and equipped. As a matter of fact I have seen some sterile filling rooms that were pretty damn dirty from my point of view. However, in handling biologicals and sterile pharmaceuticals everybody has a bugaboo. If it isn't the NIH; it is the FDA or the BAI.

There's one good rule to follow in making any layout. Don't put any partitions in and then, if any insoluble problem develops later on, partitions always can be put in if it is found that there is no other practical way to solve the problem.

Partitions are sometimes used to stifle noise as for instance the noise produced by a battery of coating pans. Partitions act as sounding boards and accentuate the noise produced within the walled area. Properly designed partitions will of course stifle air-borne noises to a large extent but they accentuate structure-borne noises such as vibration. But the right insulating material will do a better job. A battery of noisy machines properly mounted and located in a large, open, soundproofed area can be rendered unobjectionable. At the Chattanooga Medicine Co. for instance we located the IBM machines at one end of an open office. Although there were some doubts expressed, we decided not to partition off the area until operation convinced us of the necessity. The partition was never erected and that office is one of the quietest of which I have any knowledge.

Partitions were used traditionally to permit sloppy housekeeping—or none at all. Some of the partitioned-off areas had no dust collecting equipment in them at all. The health of the worker didn't matter and if the dust was bad enough or poisonous enough he was given a mask. The use of partitions gave rise to curious notions of contamination. All white products were made together and all colored products were made separately. The theory was that a product was contaminated only if you could see the contaminant. This led to some disastrous mixups in the trade as for instance the sulfathiazol-phenobarbital mix-up.

The way to prevent contamination and mix-ups is to make varicolored products together; to provide the necessary dust control equipment and to educate workers in proper powder handling techniques. This isn't theory; I've been practicing this method for years and there have been no mix-ups or contaminations in the plants of any of my clients.

The worst thing about partitions is that they force multiplication of supervision because obviously you can't put a bunch of workers into a room and expect them to supervise themselves. The isolation of departments within partitioned areas causes a lack of team work and too much departmentalized thinking. Partitions waste space because you must have access aisles to the partitioned areas, and equipment within partitioned areas cannot usually be placed in contact with partitions but must be set out a foot or two for operating and maintenance reasons. This wastes a strip of floor space on both sides of the partitions.

In the new Pacquin plant the entire packaging department is located in one corner of the warehouse area with no fixed barriers at all. Experience has caused no problems to come up from this type of layout. In this plant the manufacturing department is not isolated from the other areas by means of partitions but is located on an open mezzanine, which we were forced to build when we took the plant over, simply because we didn't have sufficient floor space. If we had had enough floor space there wouldn't have been any mezzanine and there wouldn't have been any separating partitions either.

So if you want to save money and floor space in your new plant don't put in any partitions that are not required by law, fire or sanitary regulations.

An Accountant—From An Engineer's Standpoint

The typical accountant is a man past middle age, spare, wrinkled, cold, passive, noncommittal, with eyes like a cod fish; polite in contact, but at the same time unresponsive, calm and as damnably composed as a concrete post or a plaster of paris cast; a human petrification with a heart of feldspar and without charm, minus bowels, passion or a sense of humour; entirely lacking in imagination and initiative. Happily, they never reproduce, and finally all of them go to Hell.

Note: The foregoing was relayed to me by the president of one of the big chemical companies, an executive who has had his problems with visionless bookkeepers. I don't know who composed this piece but he knew what he was talking about.

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

U. S. Rotary Vacuum Filler

The U. S. Bottlers Machinery Co. has published a 16-page booklet which fully illustrates and describes 6 basic models and 14 adaptations of its U. S. Rotary Vacuum Filler machine. The catalogue includes pictures of the Float Valve Assembly, Vacuum Overflow Return Pump, Friction Drive Clutch and other automatic controls, container handling attachments for worm feed type fillers and for dial feed type fillers, as well as specifications for a feed and discharge conveyor.

The six basic models include NO-16, NA-15, NA-22, NA-33, NC-24 and NC-30. These U. S. Rotary Fillers embrace a line of these six models that employ the same basic principles of advanced automatic machine design

but differ in size and capacity. The adaptations are custom built into basic models to meet individual filling requirements.

This catalogue may be obtained from U. S. Bottlers Machinery Company at 4015 N. Rockwell St., Chicago 18.

Plant Maintenance Bulletin

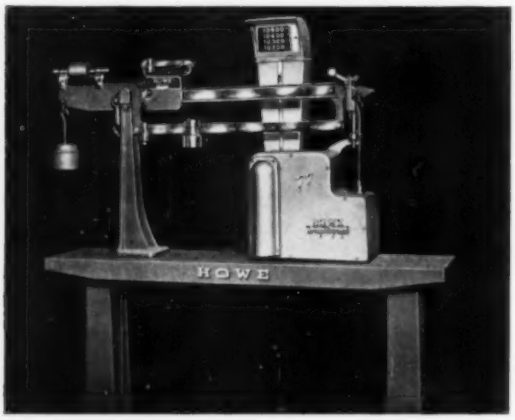
A completely new 4-page bulletin describing a dozen different special coatings for plant maintenance use has been issued by United Laboratories, Inc. of Cleveland, Ohio. This new literature describes the use of various industrial products for solving such problems as skid-proofing, rust prevention, painting over damp areas, weatherproofing and decoration of exterior masonry, interior waterproofing, painting over hot surfaces, protection against acids, chemical fumes and other special maintenance work.

Howe Scale Weightograph Unit

A revolutionary development in automatic scale indication was announced recently by Mr. Richard F. Straw, Vice President in charge of Sales, The Howe Scale Company, Rutland, Vermont, with the introduction of the new HOWE 77 WEIGHTOGRAPH. A weighing accessory, featuring a new projection type of weight indication, the unit can be attached to any make of beam scale, or to any scale convertible to beam operation, making an old-fashioned beam scale an "automatic" of the latest type.

The HOWE 77 WEIGHTOGRAPH is simply attached to the beam shelf and connected to the beam with a rod. It is the result of many years of Howe experience in the development and improvement of the Weightograph as the simplest automatic weighing device ever placed on the market.

The HOWE 77 WEIGHTOGRAPH features a non-protruding periscope with a unique, convenient eye-level screen which instantly flashes the exact weight in large, illuminated, crystal-clear figures for easy, speedy and accurate reading. It is designed with the latest methods of optical projection which increases image brightness and contrast five times. The image is read off the mirror instead of a ground glass screen, which contributes greatly to the readability of the image under all sorts of light including daylight. The reading line length is 180 inches (15 feet).



There are no complicated parts to get out of order in the HOWE 77 WEIGHTOGRAPH. There are no gears, no friction discs, no racks, no pinions, no weighing springs. No adjusting of weights and poises is necessary. No waiting for the beam to stop oscillating (as in a beam scale) before you take a reading. No straining of eyes at indistinct notches and figures. No matter where you stand to take a reading, it is always the same, with no parallax. The 77 WEIGHTOGRAPH weighs all the load at one time and shows the full load weight reading. It can also be used for "over" and "under" readings.

In the simple mechanism, a positive drive means no lost motion or backlash. The upward pull of the connecting rod swings the 77 WEIGHTOGRAPH chart in an arc, between a stationary light and magnifying lens. The figures and graduations on the chart are magnified to about forty times their original size and reflected by means of mirrors to the mirror-type screen of the periscope. The oil dashpot connected to the chart unit dampens the up and down movements of the beam. This results in an image on the screen that comes to a stop quickly for easy and instant reading. The chart and pendulum shaft operate on ball bearings as does the even lever. The 77 WEIGHTOGRAPH is extremely sensitive and there are no zero change or inaccuracies with wide changes in temperature. It is simple, fast, accurate and trouble-proof.

The light source is a long-life prefocused projection lamp with a bayonet lock insuring accurate positioning of the filament. This means that there is no need for adjustment of the position of the lamp and no lamp can be substituted for the correct one. The projection lamp greatly increases the light intensity and image brightness. A large condensing lens with a heat filter intensifies the light on the chart.

The 77 WEIGHTOGRAPH is furnished with a shelf lever which allows greater flexibility in application. Weights can be added to the counterpoise in order to increase the weighing capacity. The 77 WEIGHTOGRAPH has twice as many graduations with a given unit as any other automatic scale. It reveals and checks the condition of the scale. By a few quick tests it proves whether the scale is fast or slow, or in perfect balance. It acts as an automatic weigh-master.

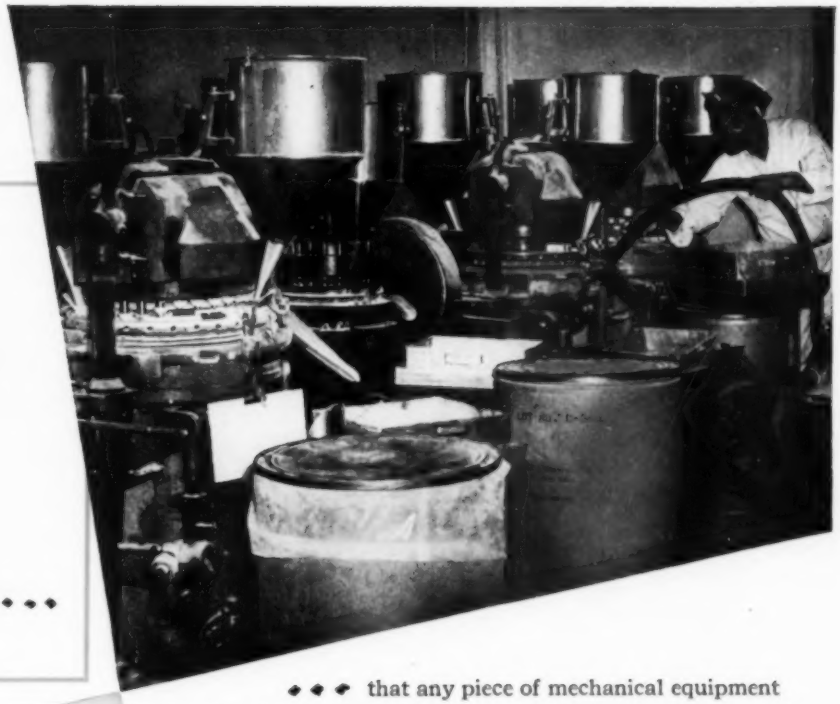
The 77 WEIGHTOGRAPH is modern in appearance and has an attractive baked enameloid light blue-gray finish with applique chromeplated trademark.

Bin-Dicator

A new, special model bin-level indicator which solves the problem of securing dependable level indication in large bins is announced by The Bin-Dicator Company, 13946-170 Kercheval, Detroit 15, Michigan.

The new unit, known as Model CS Bin-Dicator, is designed for suspended installation from above and can therefore be located anywhere in the bin where there will be a free flow of material to and away from the diaphragm. This flexibility as to location permits the successful application of Model CS Bin-Dicator in bins

"We subject
STOKES PRESSES
to the
severest tests...



One of the busy tabletting rooms at Keith-Victor Pharmacal Co., St. Louis, Mo. Stokes tabletting presses of old and new models produce tablets of more than 2000 formulations and 400 types every month.

• • • that any piece of mechanical equipment can be given!" So says Victor M. Hermelin, President of Keith-Victor Pharmacal Co., St. Louis, Mo.

"Twenty Stokes rotary presses are run in our plant at extreme speeds — even higher than you rate them — and *continuously!*"

"Dry materials, wet materials, granules, powders, hygroscopic and highly corrosive materials are compressed with extreme accuracy on Stokes machines at Keith-Victor!"

"Over 400 different types of tablets — every shape and size possible — including some impossible shapes — plus 2000 different formulations — are made *every month* on Stokes presses in our plant!"

"These machines are rolled around all over the plant and handed a terrific jostling — but they keep running!"

"Needless to say, we are *sold*, 100%, on Stokes Rotary Presses!"

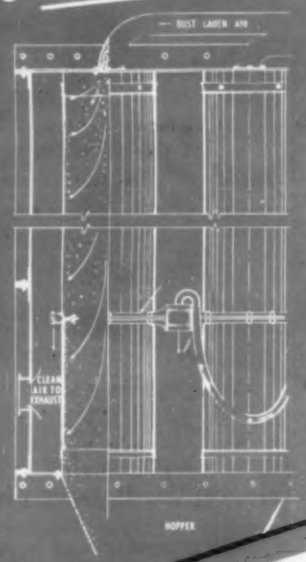
STOKES

STOKES MAKES
Plastics Molding Presses,
Industrial Tabletting
and Powder Metal Presses,
Pharmaceutical Equipment,
Vacuum Processing Equipment,
High Vacuum Pumps and Gages,
Special Machinery

F. J. STOKES MACHINE COMPANY, 5532 TABOR ROAD, PHILADELPHIA 20, PA.

IF IT'S GOOD ENOUGH FOR ULTRA-FINE RADIOACTIVE DUSTS

IT'S IDEAL FOR YOUR MOST HAZARDOUS JOBS



Sectional view of MIKRO-COLLECTOR showing felt filter bags and reverse jet cleaning ring.

10 Reasons
why a MIKRO-COLLECTOR *will best help you win a war with Dust*

1. Phenomenal Filter Rates
2. Highest possible recovery of solids
3. Requires less filter surface, floor area
4. Extreme simplicity, low upkeep, minimum attention
5. Selected wool felt filtering medium
6. Reduced number of filter bags; quick changeover
7. Continuous, fully automatic operation
8. Uniform air flow
9. Easy handling of dust loads, damp or dry
10. Thorough survey and diagnosis of dust problem

The MIKRO-COLLECTOR* has virtually no rival in the collection of radioactive dusts of ultra-fine particle size. For among many other triumphs, it has scored a spectacular record in the handling of such dusts. Its installations for this purpose alone, during the past year, have a combined capacity of more than 100,000 cfm.

We can show you data which should leave no doubt in your mind that a MIKRO-COLLECTOR can handle your job economically and efficiently, if it falls in either of these classifications:

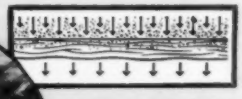
1—*Elimination of atmospheric pollution—regardless of the dangerous or noxious quality of the dust, or the minute size of the dust particles.*

2—*Full recovery of a valuable product.*

This is made possible by the MIKRO-COLLECTOR's pressed felt filter medium and its Hersey reverse-jet cleaning ring, which assure phenomenal filter rates and the very highest dust recovery.

SEND FOR—**actual sample of the felt used in a MIKRO-COLLECTOR. See for yourself how it helps you *"turn dust into dollars."***

Photo-micrographs illustrate value of wool felt as a superior filter medium.



Photomicrograph (25 diam. enlargement) of special, pressed wool felt... Drawing shows how dust particles are trapped by density of felt while air flows through in constant volume.

Photomicrograph (25 diam. enlargement) of ordinary filter cloth... Drawing shows how dust can escape through open mesh.

PULVERIZING MACHINERY COMPANY
22 Chatham Road Summit, New Jersey

MIKRO-COLLECTOR (100 PER CENT)
Reg. U. S. Pat. Off.
By the makers of
MIKRO-PULVERIZERS and MIKRO-ATOMIZERS

**Patents applied for by H. J. Hersey, Jr. and Pulverizing Machinery Company*

1130

PRESERVE OUR HERITAGE: FAITH, FREEDOM AND INCENTIVE

containing materials which tend to build up on the walls of the bin and to flow down through the central area only. Under these and similar conditions, indicators mounted on the bin wall couldn't function properly but the new Model CS Bin-Dicator, mounted in the area of moving material, gives dependable indication of high and low levels.

The unit is designed to be drilled and tapped to take any size pipe up to 2". The support pipe also accommodates electrical wiring, making conduit unnecessary. Because of the manner of mounting, the installation can be easily moved up or down in the bin to operate at different levels or lifted out for inspection.

F. B. Redington Co. Catalog

A complete showing of more than 35 types of Automatic Cartoning and Wrapping machines, and of all kinds of ingenious special packaging attachments, is now available in a 32-page, profusely illustrated catalog just issued by the F. B. REDINGTON CO., 112-Q South Sangamon Street, Chicago 7, Illinois. Among the first to produce practical means for wrapping chewing gum, mint rolls and other items at high speed, REDINGTON now builds machines for major packagers of everything from penpoints to penicillin.

The catalog—first ever issued by REDINGTON to include its entire varied line—gives full information on fields of use for various types and models, production speeds, and special features. The illustrations show, in addition to the machines themselves, a wide range of the actual packages produced. Close-ups show many of the unusual attachments which are exclusive REDINGTON features.

Controlled Volume Pumping

A new 24 page two-color bulletin describes Lapp Insulator Company's line of PULSAFEEDER piston-diaphragm pumps.

The feature of *no stuffing box* is stressed throughout the bulletin, and it is noted that PULSAFEEDER, although basically a pump, will do the work of a chemical feeder, a meter, an instrument, a filling machine, a proportioner and a sampler.

An imposing list of chemicals handled by the PULSAFEEDER emphasizes its versatility on hard-to-handle chemicals.

The bulletin also goes into considerable detail on special liquid-handling assemblies which cover a completely non-metallic construction of Lapp Chemical Porcelain and fluoro-plastics, a double diaphragm head for liquid chlorine and other hazardous liquids, a completely isolated pumping head, a head for gas compression and an all welded assembly without gaskets.

Both manual and automatically-controlled types are described. In manual control, adjustment of output is changed by turning a handwheel, while in the automatic design the adjustment is made pneumatically.

Several pages describe the Auto-Pneumatic PULSAFEEDER, pointing out its adaptability to automatic volume adjustment from commercial pneumatic instruments. Instruments measuring such process variables as flow, pH, weight, pressure, temperature and others can be used as control for the Auto-Pneumatic PULSAFEEDER.

The bulletin also describes Lapp PULSAFEEDER for chemical water treatment, catalogued Model DE, and Model 200 PULSAFEEDER transfer pumps, the latter being high volume pumps operating on the PULSAFEEDER piston-diaphragm principle.

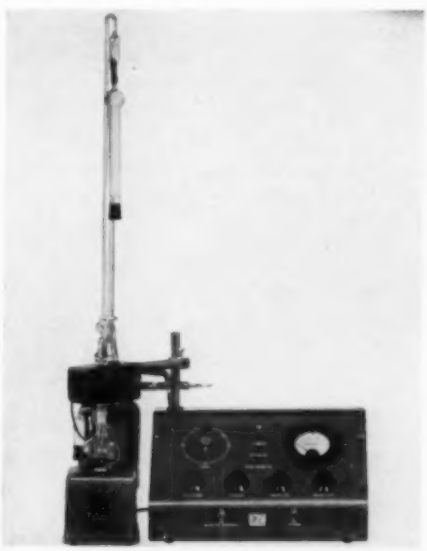
The Bulletin is identified as No. 300, and will be sent on request by Lapp Insulator Co., Inc., Process Equipment Division, LeRoy, N. Y.

Beckman Aquameter and Moisture Content

Extensive field tests with the new Beckman Aquameter show that it provides the most accurate, rapid and convenient method for determining the moisture content of pharmaceuticals, alcohols, ethers, sovlents, tobacco, antibiotics and food products such as yeasts, grains and jellies, etc.

Designed by Dr. H. A. Frediani, Research Chemist with Merck & Co., the Beckman Aquameter, operates on the "dead stop" titration principle using Karl Fischer reagent. The entire titration is automatic and is completed in one or two minutes. Accuracy is 0.5 per cent and reproducibility ± 0.05 ml or better, independent of the color, composition or turbidity of the solution.

Other features are: it distinguishes between true and apparent end points; permits rapid, successive determinations without resetting controls or emptying sample container; operates on standard 115-volt, 50/60 cycle a-c line. Initial adjustment is simple and easily made, and any number of sequential titrations can then be carried out with no further checking or setting . . . merely add the sample, turn the knob and the titration is completed automatically and without attention. For further details write Beckman Instruments, Inc., South Pasadena, California, and ask for Bulletin 276-63.



Another FIRST

. . . for S & S and STOKESWRAP! A new method of packaging liquids. And a new way to merchandise your liquid product! It's fast . . . it's economical. First introduced at the recent packaging show in Atlantic City, the general public and trade reactions to this newest achievement of the STOKESWRAP indicate amazing enthusiasm. Just imagine producing 120 single application packages of hand lotion per minute. The complete operation is automatic, from filling to heat-sealing the transparent plastic film pouch. As give-away samples of hand lotion, these small, neat-looking packages contain enough lotion for one application. Perhaps there's an idea here for your product. We'll be glad to discuss your problem, without obligation, of course.

STOKESWRAP ALSO PACKAGES

CREAMS • OILS • GREASES
JUICES • CONCENTRATES
DRESSINGS • LOTIONS
COSMETICS • CHEMICALS • FOODS
SOAPS • SAUCES • FLAVORINGS

FOOD MACHINERY AND CHEMICAL CORPORATION

STOKES & SMITH CO

Pacific Coast
SIMPLEX PACKAGING MACHINERY, INC.
Oakland, California

4912 Summerdale Avenue
Philadelphia 24, Pa.

Multiple Spout Filling Heads

For those requiring greater output for standard sizes of bottles or cans, the SCIENTIFIC FILTER CO., 62A ROSE ST., NEW YORK CITY, is now producing adjustable 4 and 6 spout filling heads. With these new inexpensive heads the portable type of vacuum filler in many cases will now provide hourly outputs almost equal to that of larger, more expensive machines.

For perfumers, pharmaceutical manufacturers and others filling small vials, solid block filling heads up to 9 spouts solve the problem of large output at nominal cost for equipment. The vials can be filled in trays or right in the shipping cartons without any further handling.

The above types of filling heads are particularly useful for odd shaped bottles or vials which can not be efficiently handled on larger, more automatic equipment.

Adjustable 3, 4 and even 6 spout heads can be furnished for shaker type bottles as used by perfumers, barber supply houses, for meat sauces and other preparations.

Special individual gallon spouts are available (also suitable for halves). Two such heads are used per machine, thus providing large hourly output with ease. Up to 350 gallons per hour can be readily filled with these heads.

New Adjustable Pallet and Skid Racks

The improved adjustable Pallet Racks and Skid Racks are specially designed to make use of every inch of existing storage space without new construction or extension. Increases efficiency in transporting and moving stock due to easy accessibility.

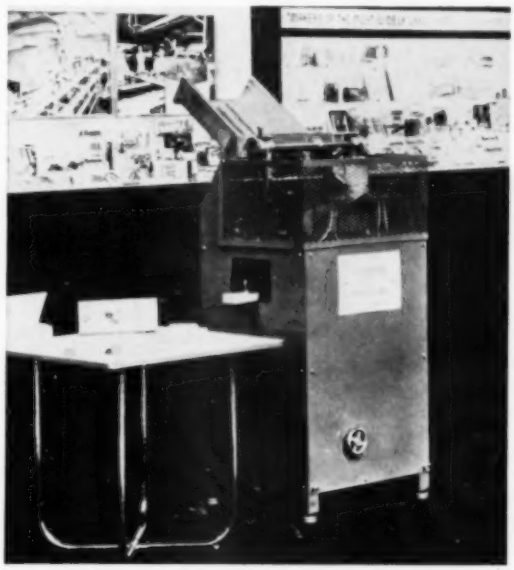
Just a simple arrangement to suit any particular floor plan—manufacturing line or storage plant. These improved adjustable racks can be constructed to suit any special problem or requirement, and are made to cut down materials handling costs.

By arranging the units in tiers, air space is utilized to the maximum, providing increased manufacturing space. This arrangement also solves the inventory control problem—the stored articles can easily be seen.

Designed and manufactured by Market Forge Co., Everett 49, Mass.

New Tray-Lock Machine

At a recent Packaging Show, the Package Machinery Company had in operation a new Tray-Lock machine which aroused exceptional interest. This machine produces a tray with glued tabs which are inserted in



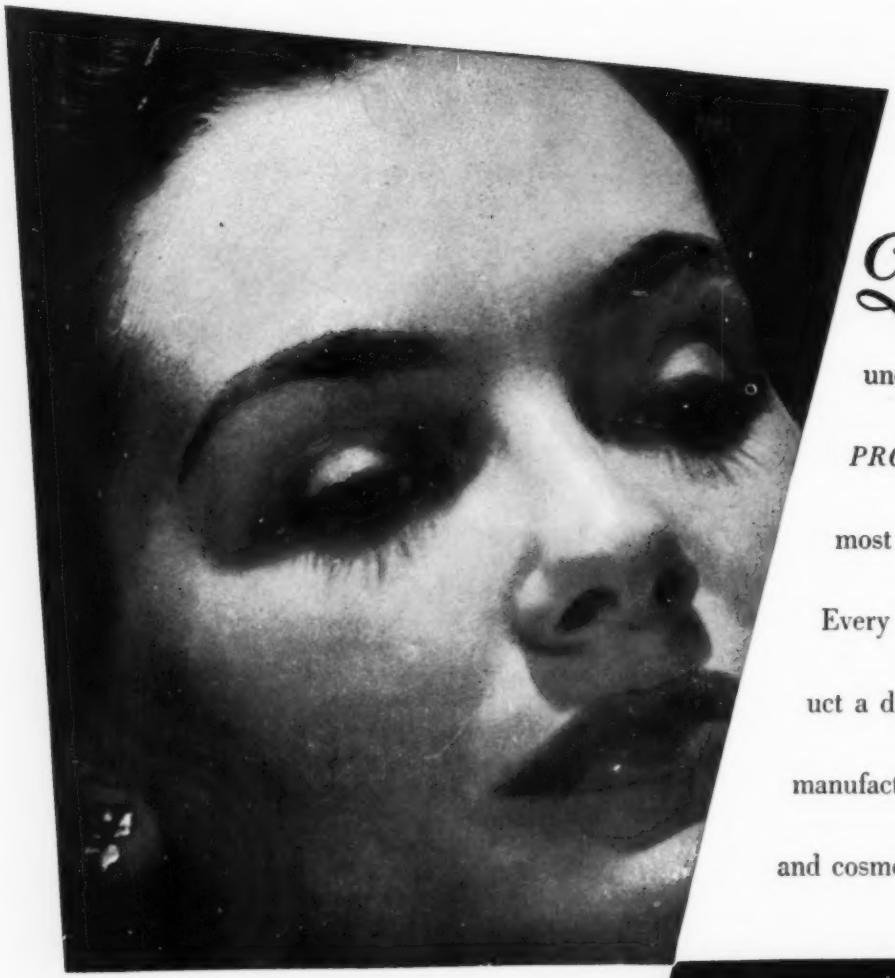
slots. The blanks used to form the trays have a straight slot, which requires simple die work, and should result in somewhat lower costs for blanks. Gluing the tabs to the sides results in a stronger and firmer tray, as was evident by the trays produced at the Show.

This new machine handles a wide range of sizes, and change-over for a different size of tray is a simple operation. Trays are delivered right-side-up, ready for filling. The machine has an adjustable speed of 34 to 90 trays a minute. Complete information may be obtained by writing the Package Machinery Company, Springfield, Mass.

Small Purifiers

A new 6-page bulletin has just been published describing the small line type Hi-eF Purifier recently developed by the V. D. Anderson Company. In this folder are listed many functions of this new unit which is used to clean up small pipelines carrying live or exhaust steam, vapors and air. These include applications on steam drums, ejectors, steam jacketed kettles, heat exchangers, vacuum canning equipment, laundry and dry cleaning equipment, intercoolers for gas compressors, air tools, spray painting, etc. In addition the bulletin describes the advantages which result in the use of these Purifiers on the above applications such as (1) increased production efficiency (2) reduced maintenance costs (3) improved products. The folder also contains diagrams of typical installations, specifications and prices of these units which range in size from ½" to 2".

For a copy write for Bulletin 500, Purifier Division, 1935 West 96th Street, Cleveland 2, Ohio.



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Readers' Questions

FRECKLE CREAM: We are interested in manufacturing, in Italy, a truly effective ointment against freckles. Please advise us whether you could give us a very good formula with which we could experiment. Padova.

As you are probably aware, many of the compounds, such as mercury salts which might be efficient in removing freckles and other skin discolorations, are also quite toxic and they may not, therefore, be used in American products. About the best I can do is suggest the following as a typical formula for making a so-called freckle cream:

Glyceryl monostearate	**11 per cent**
Petrolatum	**2 " "**
Mineral oil	**3 " "**
Glycerine	**10 " "**
Beeswax	**1 " "**
Water	**63 " "**
Bismuth oxychloride	**10 " "**

LIQUID DENTIFRICE: I would like to ask you whether or not you have any record of a liquid dentifrice being on the market about 30 years ago by the name of Rubifoam or Robofoam or some such a name. It was red in color, foamed when you applied it to your teeth, and had a wonderfully pleasing taste and odor. I used to use it; however, I believe that it has been off the market for years. There also was another one on the market at that time which was practically alike, and I think the name of it was Cisifoam or Zisafoam. These names I know are not correct. It has been so long since I have seen these products that I have forgotten their real names but I remember well using same. I would like to obtain the formula of a product like these just mentioned and put it on the market. I would like to be able to match the taste and aroma of these preparations. Detroit.

Frankly, I am not familiar with the products described. However, in his text "Modern Cosmetics," Thomssen mentions that a formula for a product of this sort, which was used extensively in past years, consists of:

Olive oil castile soap	**70 lbs.**
Alcohol, specially denatured 38-B	**43 gals.**
Borax	**3 lbs.**
Saccharine soluble	**½ lb.**
Glycerine	**40 lbs.**
Water distilled	**43 gals.**
Flavor	**12 lbs.**
F.D.A. cert. red color (amaranth red)	**Sufficient**

Thoroughly dissolve the soap in 40 gallons of distilled water, heated to almost the boiling point, cool down to about 90°F., dissolve the borax and color in the remaining or three gallons of hot water and add to the soap solution. Dissolve together the flavor, glycerine and alcohol and pour into the soap solution. Mix well with the liquid stirrer in the mixing tank. Transfer to a storage tank and let the product stand for ten days to clarify. Then filter and fill.

MEDICATED CHEWING GUM: Some time ago you published an article on the production of medicated chewing gum as a dentifrice in either the magazine or in one of your yearly reviews. I have lost the reference and have been unable to locate it. Would you be kind enough to send me the reference? Des Moines.

I have carefully checked our index and I cannot trace the article referred to. Of course, we have written on developments in dentifrices but I do not recall that I mentioned chewing gums. I should like to point out that chewing gums were touched on in the "Michigan Workshop on the Evaluation of Dental Caries Control Technics", which appeared in the *Journal of the American Dental Association*, Vol. 36, page 3, January 1948. Of course, dentifrices containing activated charcoal and more recently containing chlorophyll, have appeared on the market. In this connection, you might be interested in the chewing dentifrices recently patented by K. K. Kearby: U. S. Patent 2,525,072, October 10, 1950.

EMULSIFYING AGENTS: Can you give me information as to the American equivalent of Lanette Wax and Cera emulsificans? These preparations are manufactured in England and are recommended for the production of various creams and absorption bases. New York City.

The American equivalent of Lanette Wax, developed during the war, was described as consisting of:

Cetyl alcohol flakes	**9 parts**
Sodium lauryl sulfate	**1 part**

Cera Emulsificans, also known as emulsifying wax, is now officially in the British Pharmacopoeia, and according to this text, a suitable preparation may be obtained by the following process:

Cetostearyl alcohol	**90 Gm.**
Sodium lauryl sulfate	**10 Gm.**
Distilled water	**4 cc.**

Melt the cetostearyl alcohol and heat to about 95°. Add the sodium lauryl sulfate, mix, add the distilled water and heat to 115°. Continue the heating at 115°, stirring vigorously, until frothing ceases and the product is translucent. Cool quickly.

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Industry's Books

American Pharmacy — Fundamental Principles and Practices—Pharmaceutical Preparations, Editor-In-Chief Rufus A. Lyman, M. D., Dean Emeritus, College of Pharmacy, University of Nebraska, Third Ed., J. B. Lippincott Co., 505 pp., Illus., $8.00.

The presentation and coverage of this work is adequate since the book enjoys the authorship of about twenty modernly and widely trained specialists working in twenty institutions located in fifteen different states from California to Massachusetts and from Florida to Wisconsin. Carefully planned and elaborately worked out, this book lives up to its title. It brings under one cover the facts needed by the student and by the practicing pharmacist relating to fundamental principles and practices, pharmaceutical preparations and biologicals. A complete systematic treatment of information on the preservation, storage, and packaging of drugs and related items is an added feature of this text.

Essentials of Pharmacology, by Frances K. Oldham, Ph.D., M.D., Research Associate in Pharmacology, The University of Chicago, F. E. Kelsey, Ph.D., Associate Professor of Pharmacology, The University of Chicago, and E. M. K. Geiling, Ph.D., M.D., Frank P. Hixon, Distinguished Service Professor and Chairman of the Department of Pharmacology, The University of Chicago, Second Ed., 462 pp., J. B. Lippincott Co., Phila., $5.

This book presents briefly and concisely the essential information about the various drugs of current medical importance. Each chapter presents a discussion of a group of drugs possessing similar activity and provides their structural formulas, a list of official preparations and a selected bibliography. The preparations are compiled from the U.S.P. XIV, B.P., 1948, N.F. IX and N.N.R., 1951. The more extensive additions or revisions in this edition include a discussion of the role of radioactive isotopes in medicine and medical research; an enlargement of the section on adrenergic blocking agents; a new chapter devoted to ganglionic blocking agents and muscle relaxants; and an extensive revision of the section on antihistamines. Discussions of such new agents as ACTH, cortisone and the antibiotics penicillin, aureomycin, chloramphenicol and terramycin are also included.

Vinyl and Related Polymers, Their Preparations, Properties, and Applications in Rubbers, Plastics, Fibers, and in Medical and Industrial Arts, by Calvin E. Schildknecht, Celanese Corporation of America, 723 pp., John Wiley & Sons, Inc., New York, $12.50.

Textile fibers, rubbers, plastics, films, finishes, adhesives, oil additives, ion exchange resins, blood plasma substitutes, prosthetics, dental resins, dielectrics, synthetic gums, textile sizes, safety glass interlayers, optical plastics—these are only a few of the amazingly diverse applications of the vinyl-type polymers. Stressing the experimental, practical, and commercial aspects of the subject, Dr. Schildknecht surveys the vinyl family of synthetic high polymers and copolymers derived from styrene, vinyl chloride, vinyl acetate, isobutylene, acrylic monomers and many others. The book begins with a chapter on styrene polymerization, designed as an introduction to polymer science; it then goes on to present each polymer type as simply as possible. The limitations as well as the advantages of commercial products are discussed; the author makes evident trends of research and the contributions of individual companies. Dr. W. O. Baker, Professor C. S. Marvel, and many other chemists here and abroad have given advice and help in the preparation of this book.

Physicians' Desk Reference To Pharmaceutical Specialties and Biologicals, (1952) Sixth Ed., J. Morgan Jones, Editor, Published by Medical Economics, Inc., Rutherford, N. J. 632 pp., distributed free to physicians only.

Physicians will find that the latest edition, PDR 1952, contains descriptions of approximately 2,000 of the most important pharmaceutical products in use today. This information appears in the White Section of the reference. The three other integral sections of the book are for cross reference purposes. They are the Alphabetical Index listing brand names and company names, the Classified Index listing all described products by their drug, chemical and pharmacological groups, and the Therapeutic Indications Index listing all described products under the diseases or conditions for which they are indicated. The fifth section of the book contains General Professional Information that is not readily available from any other source.

Federal Food, Drug, and Cosmetic Act, Judicial and Administrative Record 1949-1950, by Vincent A. Kleinfeld, and Charles Wesley Dunn, 543 pp., Commerce Clearing House, Inc., New York, $10.25.

This book follows, for the period 1949-1950, the general pattern pursued in Kleinfeld and Dunn, "Federal Food, Drug, and Cosmetic Act, Judicial and Administrative Record, 1938-1949," The books are designed to furnish a useful guide and source book not only for the attorney, both expert and non-expert in the field, but also for the business executive and administrative official who would like to have on his desk something for ready reference. Essentially, the book is divided into four portions. One part contains every opinion rendered under the Federal Food, Drug, and Cosmetic Act which appears in the jurisdictional law reporters and, in addition, various so-called "unpublished" decisions, findings of fact and conclusions of law, and charges to juries, which cannot be found except perhaps in notices of judgment published by the Food and Drug Administration, and in the CCH Food Drug Cosmetic Law Reports. The second portion of the book contains the "Statements of General Policy or Interpretation" issued by the Food and Drug Administration. The third section of the book contains in full the definitions and standards for food promulgated by the Federal Security Administrator under the authority vested in him by Section 401 of the Act. The fourth major part of the book represents an

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attempt to furnish references to the pertinent material for the period 1949-1950 when any problem arises under any section of the Act. The book also contains a comprehensive index for ready reference by both lawyers and laymen.

Light Hydrocarbon Analysis (*Analytical Methods Compiled and Tested for the office of Rubber Reserve, Reconstruction Finance Corp.*), by the Butadiene Committee on Specifications and Methods of Analysis, Edited by O. W. Burke, Jr. Formerly Deputy Director in Charge of Research and Development, Office of Rubber Reserve, C. E. Starr, Jr., Assistant Director, Esso Laboratories, Esso Standard Oil Co., and F. D. Tuemmler, Head, Analytical Standardization Department Shell Development Co., 639 pp., Reinhold Publishing Corp., New York, $15.

In this book you will find the largest collection of specific analytical procedures yet published in the field of light hydrocarbons. Included in an illustrative manner are various schemes of analysis employing these methods for a complete assay of highly complex hydrocarbon mixtures. This work also offers a new approach to the presentation of analytical procedures by furnishing information on butadiene manufacturing processes as a background for the development of the methods. You will find extensive information on safe practices in the laboratory handling of light hydrocarbons. This arrangement of background, detailed analytical methods, statistical data on accuracy and precision of the methods, and safe practices make this book most useful as a working manual for the industrial laboratory as well as for classroom instruction in advanced analytical chemistry.

A Textbook of Inorganic Pharmaceutical Chemistry, by Charles H. Rogers, Sc. D., Dean of the College of Pharmacy and Professor of Pharmaceutical Chemistry, University of Minnesota, and Taito O. Soine, Ph.D., University of Minnesota, Charles O. Wilson, Ph.D., University of Texas., Fifth Ed., 850 pp., Illus., Lea & Febiger, Phila., $10.

This work now reflects the most recent advances in the field and conforms to the U. S. P. XIV and National Formulary IX. Among the many changes and additions made for this edition are more detailed discussions of the pharmacology, therapeutic value, and uses of the individual compounds and their occurrence in pharmaceutical preparations. (Only those official salts of organic acids in which the inorganic portion of the molecule contributes the therapeutic activity have been included for discussion.) A wealth of important and necessary tabular matter and numerous formulas appear throughout the text and in the Appendix. They include subjects as: Buffers, Important Stable and Radioactive Isotopes that have been used in Biological and Medical Investigations, Tracer Studies, Method of Calculation for Isotonic Solutions with Sodium Chloride Equivalents for Isotonic Collyria, Frequently Used Prefixes, Suffixes, and Abbreviations, Definitions of-Chemical and Pharmaceutical Terms, International Atomic Weights, Periodic Table of Elements, Effect of pH on individual drugs and pharmaceuticals, Explanation of Procedures Used in Assay of Official Compounds, Two-page table of fourplace logarithms printed on front and back-end papers.

The National Formulary 1952, 196 pp., The Pharmaceutical Press, London, 4s. 6s. (Postage 3d).

The first edition of the National Formulary, which was published in 1949, has been revised in the light of experience of its use during the past two years and of many constructive and helpful criticisms. New sections have been added to this 1952 edition and the entire work has been brought up to date.

Engineers' Illustrated Thesaurus, by Herbert Herkimer, 572 pp., Chemical Publishing Co., Inc., New York (1952) $6.00.

This work contains over 8,000 illustrations of machine elements and assembled machinery for the engineer, designer, draftsman and manufacturer to select the machine parts or equipment most suitable for his special purpose. Every type of machine element is clearly reproduced and identified. Where necessary an explanation of the method by which it accomplishes its particular function is given. There is also a complete index for easy reference. Fasteners; Adjusting Devices; Supports and Structures; Basic Mechanical Movements; Elevators, cranes, derricks, conveyors; transmission of liquids and gases; combustion; prime movers; transportation; industrial processes; electrical appliances; comfort heating, cooling and air conditioning are the main classes treated in the book.

Prescription for Medical Writing, A Useful Guide to Principles and Practice of Effective Scientific Writing and Illustration: By Edwin P. Jordan, M.D., and Willard C. Shepard, 112 pp. with 26 figures, W. B. Saunders Co., Phila., $2.50.

Many medical men and women seem to find the preparation of articles for publication an arduous task. Consequently the purpose of this book is to try to help them say what they mean and avoid—or eliminate—some of the faults in the final manuscript which may prevent the finished product from doing justice to the work on which it is based.

Communication of Technical Information, by Robert M. Dederich, 116 pp., paper Cover, Chemonomics, Inc., New York, $5.

Written from the point of view of the business manager, methods of communication are evaluated with the following fundamentals in mind: Why is the transfer of information necessary? Who can use the information? How will the information be used? The stress is on the thinking and logic which must underlie communication of technical information. The treatment of this subject in this book, therefore, covers not only the written report, but also deals with interorganization memos, progress statements, and the vital subject of oral presentation in conferences.

A Dictionary of Antibiosis, compiled by Leonard Karek, National Institutes of Health, United States Public Health Serivce, and Elizabeth Spencer Roach, 373 pp., Cloth, Columbia University Press, New York, $8.50.

The purpose of this exhaustive compilation is to provide a comprehensive and authoritative reference volume for workers in the medical and biological fields of antibiosis. There are thousands of entries, among which, arranged alphabetically for easy reference, are listings of plants, both lower and higher forms, from which antibiotic substances have been derived; microscopic forms used as test organisms; and specific antibiotic substances ranging from the familiar penicillin to the lesser known ayfivin. For each antibiotic substance is listed, when available, the source of the substance, how it is extracted, its chemical and physical properties, spectrum in vito and in vivo, in some cases structural formulas, and toxological, pharmacological, and clinical results. The bibliography is arranged alphabetically according to authors, with appropriate cross-references.

(*Continued on page 836*)

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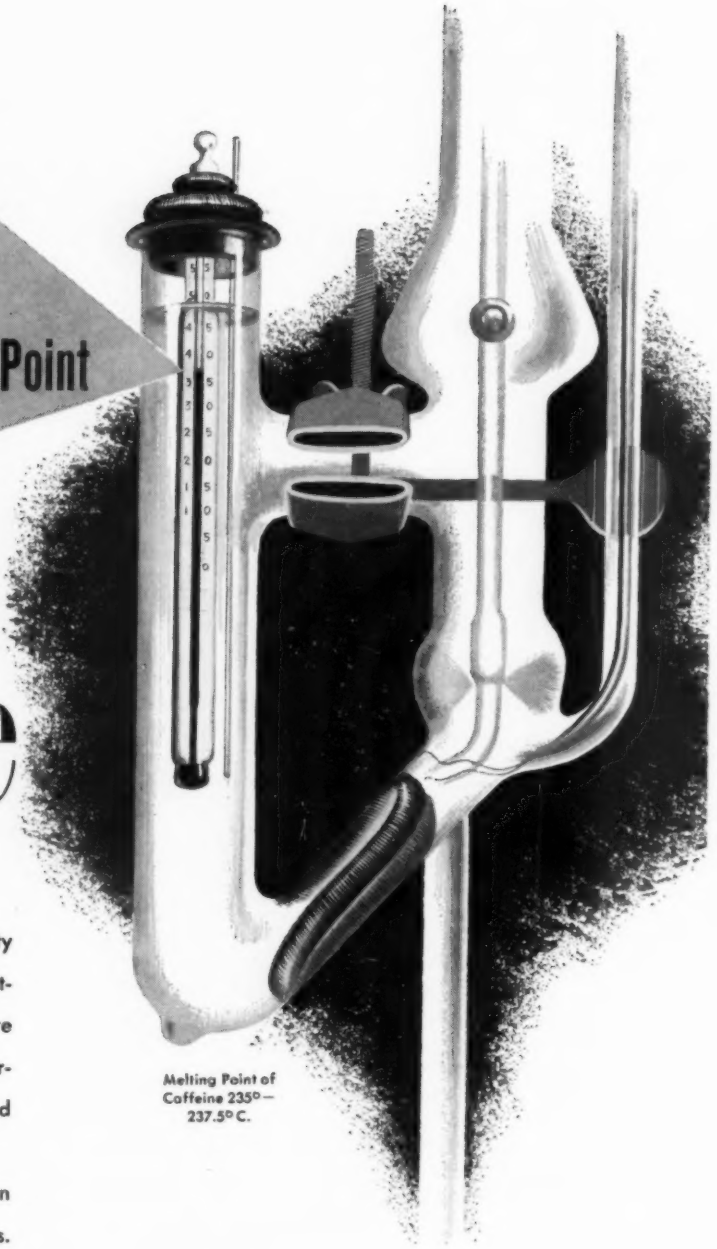

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Compounder's Corner

Cosmetics and the Aging Skin

In a consideration of the dermatologic problems of aging women, A. E. Palmer (*Geriatrics* 6:363, 1951) devotes part of her discussion to the cosmetic problem. She notes that the commercial beauty aids for the skin care of the older women fall into several main classifications: cleansing agents, lubricating or softening agents, bleaches, stimulating agents, and masking preparations. The type of preparation used is determined by a knowledge of the individual's skin. For cleansing the skin, the woman with an oily skin should be advised to use water and a nonirritating soap daily. However, the usual types of soap cannot be used in the presence of an inflammation. In such cases, the skin is cleaned with simple creams or oils. In a woman with a very dry skin, cream or oil cleansing is preferable. Sometimes a simple oil-water emulsion is very effective. Many of the individuals do well on soap substitutes or superfatted soaps.

Astringents are used to dry a basically oily skin. They act in several ways, e.g. as a fat solvent, antiseptic, and mild constrictor. Such preparations may contain any one or several of a wide variety of agents, a few of which are: zinc, alum, boric acid, bismuth, glycerine and lime water.

Commonly used creams have a wide variety of applications. Low melting point creams ("liquefying") are used chiefly for cleansing; creams with higher melting points containing any one or several of a wide variety of natural or synthetic fats, such as lanolin, beeswax, cocoa butter, cholesterin and many others, are used for their softening and protective effects. Vanishing creams are used also for their softening effect as well as for their masking properties when various powders are incorporated. Creams of suitable types are useful in softening and preserving the aging skin. Care must be taken that the cream selected does not contain some element to which the individual is sensitive. Frequently the type of perfume in a given cosmetic may cause a local hypersensitivity response. Or, the perfume may sometimes be a factor in increasing the reactivity of the skin to light, especially sunlight, thereby resulting in blotchy pigmentation of the face. Of course, any one of the other ingredients may cause an allergic response. Where this occurs it is not essential for the patient to avoid all cosmetics permanently, but only until the reaction subsides. When a new cosmetic, lacking the ingredient which is allergenic for that patient, is used, she progresses satisfactorily. Some cosmetics are available for the purpose of "stimulating" or toning the skin. These are really ointments and should be thought of as medical preparations. They do have a counter-irritant effect and cause a temporary increase of blood supply to the skin, which is desirable in selected cases. Such preparations may contain such substances as oil of cade, balsam of Peru, mercury, sulphur, and oil of wintergreen. They are effective on the leathery skins and on those presenting oil gland problems. It must be remembered, however, that they are often light sensitizers, and accordingly, if used daily over a period of years, are potentially carcinogenic. The use of the mercurial salts in" stimulating" and bleaching preparations, is dangerous if the preparations are used over large areas frequently or for prolonged periods.

The masking agents are the "foundation creams," cakes and lotions, and the powders. These are all powders incorporated into one or another vehicle. In general, when correctly selected as to color and texture for a given individual, they give the skin a smoother, refreshed appearance. These come in vehicles especially prepared either for oily, normal, or dry skins. That is, a slightly oily base or a non-oily base ("foundation") either in lotion or solid form may be obtained. If the woman uses care to cleanse these preparations from her skin daily so that she does not develop follicular concretions, they serve a useful purpose. Here again the type of skin as well as the possible presence of allergies determines the selection of the cosmetic. These masking preparations, by and large, in the absence of allergy, may also be safely applied for the purpose of concealing almost all dermatoses of the face, exclusive of contact dermatitis.

Appraisal of Sunscreen Agents

In a discussion of the appraisal of sunscreen preparation, J. H. Draize (*Arch. Dermat. & Syph.* 64:585, 1951) observes that many chemical compounds have been found capable of absorbing the solar rays responsible for production of sunburn. Potential sunscreen agents represent chemical compounds differing widely in physical and chemical characteristics, and it is difficult to classify them into chemical families. Among the larger chemical groups are various derivatives of benzoic acid (esters of para-amino, orthoamino, orthohydroxy benzoic acid), pyrones, naphthosulfonic acids, naphthoic acids, and miscellaneous groups containing higher alcohols, quinine and derivatives, hydroquinone (orthodihydroxybenzene), sulfonamide compounds, tannins, and others. Sunscreen preparations must possess the physical property of preventing the damaging rays of the sun from reaching the reactive skin. In addition, such preparations must not, per se, produce local or systemic harmful effects following normal topical use.

It is pointed out that sunscreen preparations are unique, as cosmetics, in their manner of use. Their use at beaches, for example, may involve multiple and extensive daily applications to large areas of the total body surface. In addition, applications may also be made to skin already damaged by sun or wind burn. It is essential to obtain experimental toxicity data on the damaged as well as the intact skin. Sunscreen preparations may be used by persons of all age groups and in varying conditions of health. In view of this possible extensive use, it is necessary to have pharmacologic and toxicologic data to indicate an ample margin of safety in use. Pharmacologic and toxicologic tests should establish an eight-fold margin of safety, and this entails acute and subacute dermal-toxicity and potential-sensitization studies. Such studies with tannic acid, β-methyl umbelliferone, and hydroquinone (orthodihydroxybenzene) have established that

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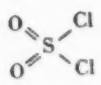
SULFURYL CHLORIDE



Synonym: Sulfuric Oxychloride
Formula: SO_2Cl_2
Appearance: Light yellow liquid

TYPICAL PROPERTIES

Molecular Weight	135.0
Pour Point	below −54°C
Distillation Range	2° incl. 69.5°C
Specific Gravity, 15.5°/15.5°C	1.680
SO_2Cl_2 Content	99% Min.

USES

Chlorinating Agent: In the production of chlorophenol, chlorothymol, pharmaceuticals, dyestuffs; reacts with organic acids to form chlorides and anhydrides.

THIONYL CHLORIDE

Synonym: Sulfurous Oxychloride
Formula: $SOCl_2$
Appearance: Clear, pale yellow to red liquid

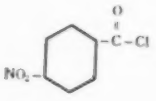
TYPICAL PROPERTIES

Molecular Weight	119.0
Pour Point	−75°C
Distillation Range	75° to 78°C
Specific Gravity, 15.5°/15.5°C	1.640
$SOCl_2$ Content	97.5% Min.

USES

Chlorinating Agent: To replace various groups with chlorine. Among end products are: isoamyl chloride, synthetic pyrethrum, phenyl propyl chloride and synthetic Vitamin A palamitate, antihistamines.

PARANITROBENZOYL CHLORIDE



Formula: $NO_2C_6H_4CO\,Cl$
Appearance: Yellow crystalline lumps or flakes

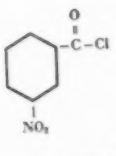
TYPICAL PROPERTIES

Molecular Weight	185.5
p-Nitrobenzoyl Chloride	97%
Melting Point	70.5°C
Distillation Range at 105 mm	202° to 205°C

USES

End Products: Procaine, dyestuffs

METANITROBENZOYL CHLORIDE



Formula: $C_6H_4NO_2CO\,Cl$
Appearance: Yellow to brown liquid, partially crystallized

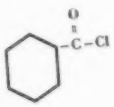
TYPICAL PROPERTIES

Molecular Weight	185.5
Last Crystal Point	28° to 31°C
Distillation Range	275° to 278°C

USES

End Products: Dyestuffs for fabrics and color photography; pharmaceuticals.

BENZOYL CHLORIDE



Formula: $C_6H_5CO\,Cl$
Appearance: Clear, colorless to light yellow liquid

TYPICAL PROPERTIES

Molecular Weight	140.5
Freezing Point	−0.9°C
Boiling Point	197.3
Specific Gravity, 15.5°/15.5°C	1.219
Benzoyl Chloride	99%

USES

End Products: Intermediates, dyes, perfume bases, pharmaceuticals, polymerization catalysts, flour bleaching agents, plasticizers, resins, etc.

Specific Compounds: Benzyl benzoate, benzoyl peroxide, benzophenone and others.

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the last is an unsuitable agent for use in sunscreen preparations. Draize observes that similar data to establish a margin of safety for many of the compounds suggested as possible sunscreen material are not available at present.

Testing Toxicity of Detergent Shampoos

In stressing the importance of pretesting detergents for use in shampoos, to avoid eye and skin irritation, H. A. Shelanski (*Soap & Sanit. Chem.* 28:33, Jan. 1952) states that surface-active materials, such as nonionics, anionics and cationics may be used with safety in shampoos, providing that the manufacturer of the basic ingredient, as well as the formulator of the finished shampoo product obtain evidence of safety of use under conditions which are customary and usual for the particular product. He calls attention to experimental work which had been done by the Division of Pharmacology of the Food and Drug Administration, as well as work performed by other laboratories throughout the U. S., in which it was found that the nonionic substances as a group were the least irritating of the surface-active materials used in shampoos. The anionic substances were the second least irritating, while the cationic substances were the most irritating.

Skelanski points out, however, that it is quite possible for a particular nonionic to be more irritating than either an anionic or a cationic substance. It is also true that it is possible for a cationic material to be less irritating than a nonionic or an anionic substance. Whatever material is recommended for use in a shampoo it is important that the material be tested for its eye irritation properties, skin irritant capacity and its sensitization properties, as well as its acute oral toxicity.

Of pertinent interest is the discussion on detergent shampoos as hazards to the eyes, as given in the February, 1952 issue of *Schimmel Briefs*. This concise review cites A. J. Lehman who warns of the possibility that mixtures of surface-active agents may be more irritating to the eyes than could be predicted from the ocular toxicity of the individual components. The only way to determine whether a given shampoo formulation is a menace to the eyes of consumers is to have it thoroughly tested on the eyes of animals according to procedures recommended by the Food and Drug Administration.

French View on Nail Varnish Ingredients

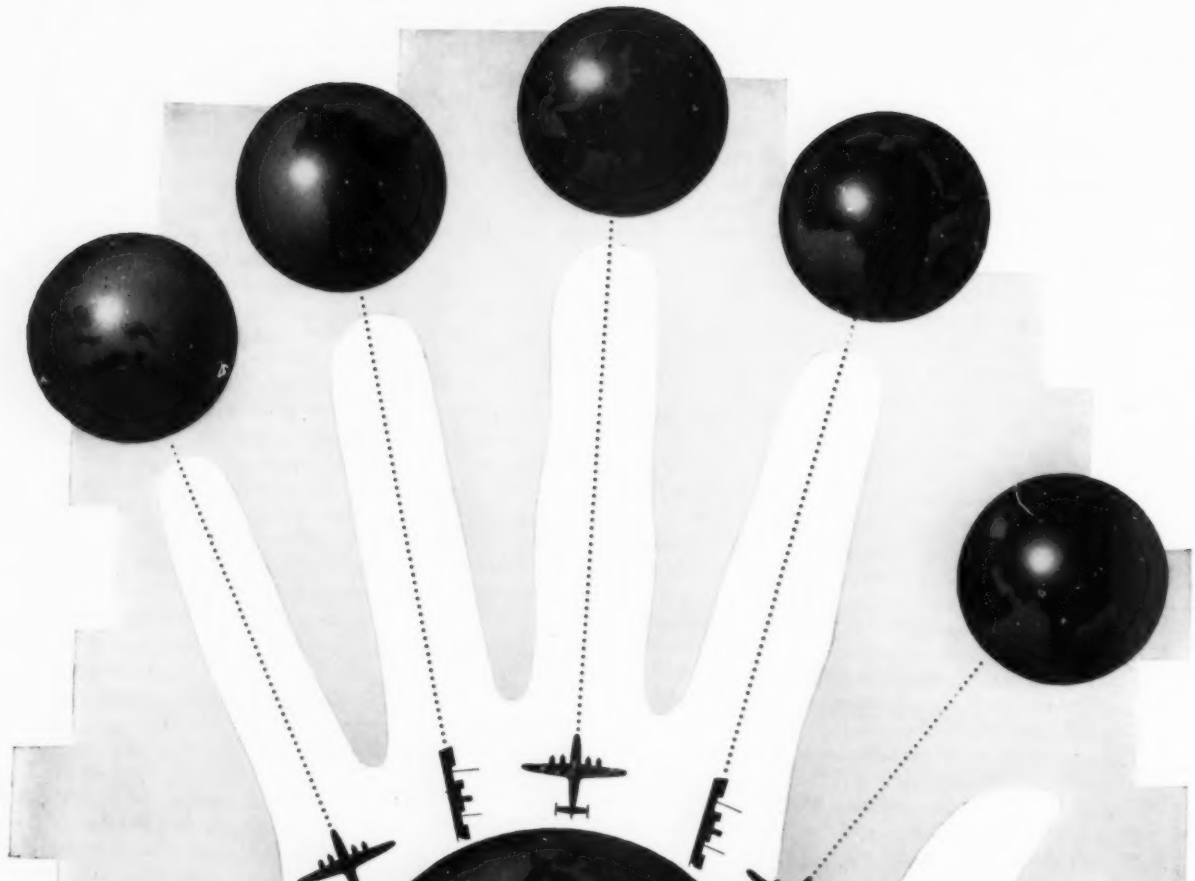
In his discussion of nail varnishes J. Morelle (*Internat. Perf.* No. 4, 1951, p. 26) suggests standards, not only for the individual components, but for the finished product as well. Thus, in reviewing the factors which control nail varnish quality, he feels that: (1) Due consideration must be given at all times to the sensitivity of nails and cuticles in their reactions with the different constituents of the varnish. (2) There must be good distribution of the dyestuffs so as to obtain a suspension with the least possible settlement, and the greatest possible fineness of grain so as not to reduce the gloss. (3) There must be an intense lustre that does not fade with the passing of time or under the influence of hot water or of alkaline or acid water, as with certain detergents. (4) Adherence must resist the influence of hot, alkaline or acid water. (5) The hardness must be sufficient to limit wear by rubbing. (6) The plasticity must be studied carefully, so that the film of varnish, while maintaining its adherence, shall not break. (7) The varnish must keep well; it must not separate into layers when bottled, nor must it expand excessively under the influence of the atmospheric temperature, which might make the bottles burst. (8) The colors must not change under the influence of light and the other ingredients. (9) The varnish must not color the nail by de-laking of the lake under the influence of solvents. (10) The varnish must not attack the nail, or the nails may break or split. (11) The varnish must dry quickly: four minutes at the most. (12) Finally, the varnish must not give colored marks on paper on which the nail is rubbed.

The film-forming elements of a nail varnish consist of cellulose ethers, solvents and plasticizers, and natural and synthetic resins. Nitrocellulose is generally the basic film-forming ingredient in a nail varnish. The nitrocelluloses that contain between 11 per cent and 12 per cent of nitrogen are those that possess the best solubility characteristics in solvents. As solvents of nitrocellulose Morelle mentions methyl alcohol, glycol, methyl glycol, butyl glycol; ethyl, methyl, butyl, propyl, cyclohexanol and methyl glycol acetates, and others; ethyl carbonate, amyl butyrate, ethyl lactate, methyl nitrite, ethyl oxalate, acetone, cyclohexanone, acetonitrile, nitromethane, pyridine, and many others. He stresses that the rate of evaporation of a solvent is among the most important characteristics to be considered in varnish formulation. The solvent must disappear entirely by evaporation and as quickly as possible.

Morelle describes plasticizers as nonvolatile solvents that may be liquids or solids. He feels that the term plasticizer is not altogether adequate. "Suppleness-maker" would be more exact, if we take the term suppleness to define flexibility or the facility with which a substance may be bent without breaking. The ideal plasticizer should have the following properties: (1) Good solvent power for nitrocellulose and resin. (2) The faintest possible color and odor. (3) The lowest possible volatility. (4) It must be perfectly compatible with its surroundings and not decompose with the passage of time. (5) It must be compatible with the pigments or dyestuffs used. (6) It must not have any action on the viscosity of other ingredients. (7) It must improve ductility, tenacity, and adherence.

Coming to the natural and synthetic resins used in nail varnish formulation, Morelle states that an acceptable resin must meet the following requirements: (1) Be compatible with nitrocellulose. (2) Be compatible with the plasticizer. (3) Contribute actively to the drying of the varnish and not retard it. (4) Contribute actively to the obtaining of glaze. (5) Must not possess any odor that would remain on the nail for several hours. (6) The gloss must remain until the time when the varnish is removed. (7) The gloss must not disappear in hot water, in detergents, or even eau de Javel. (8) The resin must not color the nail with the passing of time. (9) The resin must not color the nail with the passing of time. (9) The resin must have a high enough melting point for drying to be rapid and to be of good staying-power. (10) The resin must have the highest possible adhesive action. (11) Be hard enough to wear away as little as possible. (12) Be perfectly soluble in solvents and stable in its surroundings. (13) Be compatible with dyestuffs. (14) The resin must not modify the nail. (15) The resin must obviously possess an excellent refractive index.

As remarked by Morelle, it is very difficult to find a substance that satisfies these 15 basic quality factors. He also considers the coloring materials used in nail varnishes, discusses analytical procedures for raw materials, and briefly reviews the equipment utilized in nail varnish production.



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Skin Depigmentation by Chemicals

Physicians and laity alike have long been interested in depigmentation of the skin by chemical agents. It has been hoped that these substances might be useful in the treatment of patients having various forms of disfiguring hyperpigmentation. Ointments of mercury compounds probably have been used longer and more frequently than other substances to produce depigmentation. Their use as "freckle creams" has been persistent despite the inconclusive results produced. During the past 15 years several reports have appeared showing that hydroquinone and two other p-hydroxyphenyl derivatives inhibit melanin formation in mammals. Following this lead, C. R. Denton, A. B. Lerner and T. B. Fitzpatrick (*J. Investig. Dermat.* 18:119, 1952) showed through clinical trial, animal experiments, and *in vitro* studies that hydroquinone and p-hydroxypropiophenone are effective inhibitors of melanin formation. Monobenzylether of hydroquinone was the most effective inhibitor of melanin formation clinically, although it had no effect on melanin formation *in vitro*. These compounds when administered orally to colored guinea pigs produce depigmentation. The parenteral administration of hydroquinone and p-hydroxypropiophenone to black mice also produces depigmentation.

In clinical studies it was found that monobenzylether of hydroquinone in 10 to 33 per cent concentration in lotions and ointments is an effective agent clinically for treatment of melanin hyperpigmentation. In work with normal subjects, continuous patch tests of 10 and 30 per cent hydroquinone, monobenzylether of hydroquinone, and p-hydroxypropiophenone in yellow petrolatum were applied to the backs of seven young adults for thirty days. Four of the subjets were Negro males, one was a Negro female, and two were white males with freckles. Two of the Negro subjects developed depigmentation from hydroquinone and monobenzylether of hydroquinone. The higher concentration of these substances gave increased depigmentation. Following the termination of the experiment, pigmentation gradually returned about the hair follicles in all areas of depigmentation after one month. In two of the Negro volunteers there was dermatitis due to the hydroquinone. There was no reaction from monobenzylether of hydroquinone. There was neither dermatitis nor evidence of depigmentation from the patches of p-hydroxypropiophenone during the period of observation. It is possible that if the ointments had been applied for a longer period of time more cases would have shown depigmentation.

Twenty per cent monobenzylether of hydroquinone in a special vanishing cream base was applied to the forearms of 70 normal individuals as a patch test for 48 hours. No case of sensitivity was noted over the test period. These results indicate that the preparation is satisfactory for general clinical use. Various bases and solvents for monobenzylether of hydroquinone were tried. It was decided that the most satisfactory preparations were a lotion (acetone seven parts and alcohol ten parts), a vanishing cream base, and yellow petrolatum, each containing 10 to 33 per cent monobenzylether of hydroquinone. When the lotion is used, the solvent quickly evaporates; and a very fine flesh colored powder of the compound remains on the treated area. This powder is not objectionable and often serves as an acceptable cosmetic covering for the lesions under treatment. The ointments are not particularly greasy and they remain very smooth. The lotion and the ointment preparations can be used together, the lotion during the day and the ointment at night.

From studies on 16 patients, some of which are still under investigation, as well as the reports of other investigators, it is evident that the hydroquinone derivatives, monobenzylether of hydroquinone and p-hydroxypropiophenone, are effective clinical agents for treating hyperpigmentation due to melanin. These agents are more effective and more useful than other agents used to date. When properly employed in 10 to 33 per cent concentration in lotions or ointments, monobenzylether of hydroquinone is a valuable local therapeutic agent. Undesirable side reaction such as dermatitis or sensitization do not preclude its controlled medical use. No serious side reactions have been encountered.

Cortisone for Baldness

According to C. J. Dillaha and S. Rothman (*J. Investig. Dermatol.* 18:5, 1952), three out of four patients suffering from long-standing alopecia areata have responded to oral treatment with cortisone acetate. It is interesting to note that in the one patient who didn't respond, the onset of the disease was pre-pubertal as contrasted with the postpubertal onset in the three other patients. The appearance of new hair in three patients occurred uniformily after a period of four weeks therapy. This uniformity as well as the fact that the disease in all three cases was present for five or more years without any tendency to spontaneous remission, we believe makes it unikely that the regrowth reported here was spontaneous and coincident with therapy. At the time of this writing all three patients are still under treatment, and normal hair growth is progressing. The investigators emphasize that these are short-term and preliminary observations.

Hexamethonium in Anxiety States

According to S. Smith (*J. Mental Science* 98:161, 1952) hexamethonium is an effective adjuvant in the treatment of anxiety states. The most satisfactory results are seen in patients who have marked physiological reactions, such as sweating and tremulousness, to anxiety. Definite and in some cases equally marked beneficial results are obtained in subjective reactions, for example palpitations. These conclusions are based upon the results obtained in 17 patients (12 males and 5 females) whose main symptomatology was a combination of psychological components of anxiety and tenseness, and somatic manifestations such as sweating, tremor, and palpitations. Hexamethonium dibromide was used. No patients with renal failure, or with a history of a

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cerebral or coronary vascular incident were included in the series. Lowering of the blood pressure occurred in eleven patients. Toxic effects, all transitory, consisted of anorexia in three cases, blurring of vision for two days in one patient, and nausea in about half the patients. Treatment was continued for periods up to twelve weeks. Varying degrees of improvement were shown in all the patients and in some, excellent results, by removing physiological disturbances, which in their turn were causing the patients much anxiety. It is emphasized that hexamethonium is not a substitute for orthodox psychological exploration and therapy, but in cases hitherto resistant to such treatment it may have an excellent adjuvant value in the specific group of cases treated in this series.

Gastric Antacids and Antisecretory Drugs

In their comprehensive survey, J. B. Kirsner, W. L. Palmer, E. Levin and A. P. Klotz (*Ann. Inst. Med.* 35:785, 1951) remark that the goal of treatment with antacid and antisecretory drugs presumably is neutralization or inhibition of the free acid and peptic activity of the gastric secretion. None of the available antacids completely neutralizes free acid in man for prolonged periods, but calcium carbonate appears to be the most effective antacid in current use. In hourly doses of 2 or 4 Gm., together with milk and cream and atropine in doses of 1.0 Gm. two to four times daily, calcium carbonate usually maintains the pH of the gastric contents between 4.0 and 5.5 in patients with duodenal ulcer. It does not cause alkalosis and its constipating effect can be corrected with laxative antacids. This regimen, however, is effective only during the period of administration; it does not control excessive nocturnal gastric secretion. Calcium carbonate administered by continuous intragastric drip is perhaps more effective for this purpose, but its applicability is limited. Aluminum hydroxide, magnesium trisilicate, or tribasic calcium phosphate in large quantities diminish but do not completely eliminate the free acidity. Their neutralizing effect is much less or zero when administered at long intervals and in small amounts. The antacid efficiency of sodium carboxymethylcellulose in man remains to be determined. Protein hydrolysates are less effective than calcium carbonate even in large amounts, and they provoke a secondary rise in secretion exceeding original levels. The neutralizing effect of available resins in vivo is not impressive. Detergents such as sodium alkyl sulfate do not alter the pH of the gastric contents, and their antipeptic action in man is insignificant. Mucin has little neutralizing value. Antihistaminic agents do not depress gastric secretion in man.

With the possible exception of chorionic gonadotropin and the combination of chorionic gonadotropin and restogen, the inhibitory effect of various sex hormones, injected intramuscularly in large amounts, appears minimal. Other hormones, such as parathyroid extract, desoxycorticosterone acetate, and corticotropin (ACTH) also do not inhibit gastric secretion in vivo. Atropine produces extremely variable effects in patients with duodenal ulcer. Its principal usefulness may be to enhance antacid action by prolonging gastric emptying. In contrast to atropine and to synthetic atropine-like compounds, the results thus far obtained with other cholinergic blocking agents are promising. Tetraethylammonium salts significantly depress gastric secretion and motility in man, but there are undesirable side reactions. Hexamethonium compounds have yielded promising preliminary results. Methantheline (Banthine) bromide given parenterally apparently inhibits gastric secretion more effectively with fewer toxic manifestations. Although there is no evidence that these agents induce the physiological effects expected from complete vagotomy, they may permit in many ulcer cases a more liberal regimen of antacids and diet.

Wetting Agents in Respiratory Infections

There has long been a need for intense moisture in certain respiratory infections of infants, such as laryngotracheobronchitis, bronchiolitis, and laryngeal diphtheria. This necessary degree of moisture is often difficult to obtain by using the average group test. Steam has the disadvantage of producing hyperpyrexia in an already feverish infant. To overcome these difficulties and produce the requisite moisture, the use of wetting agents was first attempted in late 1949. G. C. Hall, Jr. (*Am. J. Dis. Child.* 83:1, 1952) has continued this work. His clinical experience has been limited to the use of one of these agents, sodium lauryl sulfate. This compound is dissolved in distilled water so as to obtain a concentration of 0.05 per cent. This solution is then placed in the humidifier bottle of a croup tent. The solution is dispersed with oxygen or some other source of pressure if oxygen is not indicated. A fog immediately forms, the density of which is controlled by the oxygen flow. The results have been gratifying. However, improvement following the use of sodium lauryl sulfate has been difficult to evaluate. Twenty patients have received this wetting agent. There were no fatalities or adverse reactions. Included in this series were five cases of laryngotracheobronchitis, two cases of diphtheria, and five cases of bronchiolitis. In Hall's opinion, the results of the use of wetting agents in exudative respiratory infections of infants have been encouraging enough to warrant their investigation in other medical centers. They should be used only in well-selected cases and in the proper concentration.

Prophylaxis of Amebiasis

Amebiasis is well recognized as a problem in institutional groups, and the occurrence of the infection in mental hospitals, particularly among highly disturbed patients, has been described repeatedly. The problem of control presented by these situations is difficult. Of interest, therefore, is the report of D. A. Berberian, E. W. Dennis, R. F. Korns, and C. A. Angelo (*J. A. M. A.* 148:700, 1952) on the prophylaxis of amebiasis. They found that the administration of six bismuth glycolylarsanilate (Milibis) and chloroquine phosphate (Aralen) combination tablets (0.25 gm. of bismuth glycolylarsanilate and 0.075 gm. of chloroquine phosphate) a day for seven days as a therapeutic course was rapidly effective in producing stools which were negative for cysts of E. histolytica in at least 93 per cent of the subjects examined. In the presence of intense exposure to a known reservoir of infection of three months, post-treatment prophylactic administration at weekly intervals of six tablets (adult dose) reduced the infection rate to 25 per cent, and daily administration of two tablets reduced the infection rate to 10 per cent, compared with a reinfection rate of 76 per cent in the control group. Untoward toxic manifestations from the medicament were not observed. The chemoprophylaxis of amebiasis by administration of bismuth glycolylarsanilate and chloroquine phosphate in combination was demonstrated to be a feasible procedure. Simultaneous chemoprophylaxis of amebiasis and malaria is suggested as an attainable objective, with either of the medication regimens studied.

Animal Health

Antibiotics Plus Ephedrine for Mastitis

The efficiency of some of the new chemicals and antibiotics in the treatment of mastitis is extremely high in the destruction or stasis of bacteria in infectious conditions. Another aspect, however, particularly in sheep, involves the treatment of acute swelling and active congestion. In their research on this latter problem, R. M. Thomas, J. E. Prier, B. J. Collopy and M. E. Labudovich (*Vet. Med.* 47:52, 1952) investigated the use of ephedrine in conjunction with penicillin, bacitracin or terramycin. The ephedrine showed marked activity in reducing congestion and swelling of affected udders. *In vitro* studies showed, however, that ephedrine hydrochloride had a detrimental effect on the inhibiting action of penicillin on the growth of micrococci isolated from bovine udders. Terramycin had greater *in vitro* activity against the organisms tested than either penicillin or bacitracin.

Supplement to Grass Silage

According to a report from the Purdue News Service, issued during April, 1952, farmers can save some money while putting more pounds on cattle if they feed Purdue Cattle Supplement A along with their grass silage, Feeding trials have shown that the combination feed will make gains of about two pounds a day at 19 cents a pound, while grass silage alone brings about a pound a day gain at 20 cents cost. Reporting on recent tests, Purdue University animal husbandry scientists say that grass silage with no supplement, only minerals, produced 587 pounds of beef per acre. Grass silage with Supplement A produced 1096 pounds of beef per acre, In other words, it required 3.8 pounds of the supplement to get a pound of extra beef. Another group of steers was fed at the same time on a ration of poor quality hay and Supplement A. Average daily gain for these animals was about 1¼ pounds and the cost went up to almost 26 cents per pound gain. Purdue Cattle Supplement A gives each animal a daily feed of 2.25 pounds of soybean meal, one pound of molasses feed, some bonemeal, salt, cobalt, and a vitamin A and D concentrate.

These tests were made because grass silage has not been a popular feed in the Midwest and the research men wanted to know why the cattle did not gain as well on it as on pasture. They found that minerals are a very important part of the ration when grass silage was fed without supplement. Their tests also showed that corn cobs, when properly balanced in a ration, have more energy value for growing steers than poor quality hay. Gains on the animals with corn cobs were as rapid but were not as cheap as gains made in previous tests where corn cobs were the roughage. This was caused by increase in price of soybean oil meal.

Nutritional Disturbances in the Mink

In a paper presented before the Division of Agricultural and Food Chemistry during the 121st meeting of the American Chemical Society, T. T. Chaddock reported on the recent treatment of some nutritional disturbances in mink. Thus, the use of water-soluble, injectable vitamin A and D has proved to be a care in the therapy of the "wet belly" or overacid condition in all ages and both sexes of all kinds and types of standard and mutation mink. Dosage has been established and the material has been injected with approximately 500 individual cases subcutaneously, intramuscularly, and intraperitoneally with no ill effects.

Readily digestible protein-carbohydrate preparations of high nutritional value containing all the amino acids required to maintain life and promote growth have proved to be a great value in the treatment of nursing anemia in adult female mink, material given per os. In order to eliminate the possibility of conditions complicating the experimental picture, penicillin and streptomycin were extensively used to eliminate infections. However, rapid recovery occurred in cases where great depletion of tissues and plasma protein during a febrile disease or the excess nursing of kit mink had left the mother in a debilitated condition.

Sodium Propionate for Ketosis in Cattle

In a report in *The Cornell Veterinarian* (42:148, 1952), L. H. Schultz points out that Ketosis treatments are difficult to evaluate because of the fact that some cows will recover without treatment. It is extremely doubtful whether any ketosis treatment will work on all cows because of the apparently complicated nature of the disease. His paper is being published at this time because it is felt that the use of sodium propionate should prove helpful in reducing dairymen's losses from ketosis. The fundamental cause of the condition is still not known. Whether sodium propionate could be used to prevent ketosis is also not known. Research work is still in progress on these points.

In the studies reported by Schultz, 19 cows with ketosis ranging in degree from mild to severe were treated by oral administration of sodium propionate at levels of ⅛ to ½ pound daily. All of the cows showed increases in milk production and improvement of appetite. At the end of ten days or less of treatment blood sugar values were normal in all cows and blood ketones had returned to normal in all but three cases.

Chlorophyll in Veterinary Medicine

According to M. E. Serling (*Vet. Med.* 47:155, 1952) highly-purified, water-soluble chlorophyll applied topically in either ointment or solution form has many uses in the everyday practice of veterinary medicine. In the treatment of burns, surgical or traumatic wounds, moist and dry eczemas and other skin eruptions, and in ulcerous pathogenic conditions of the ear, these preparations have proved remarkably effective in accelerating the healing process. End results have been excellent, and in particular, scar tissue has been reduced to a minimum. The water-soluble preparations are non-toxic and can be used freely in all animals, either alone or in conjunction with the accepted therapeutic agents. Perhaps the most impressive results from these medications have been observed in ten

burn cases. These cases were first seen after periods varying from a few minutes to ten days following injury and included first, second, and third degree burns. In all cases treated with chlorophyll the burns healed at least 25 per cent faster than those treated with usual medications. Furthermore, it has been observed that resulting scar tissue in these cases was reduced around 50 per cent, some cases healing with little or no scar tissue.

Cortisone in Small-Animal Practice

Although little work has been done with cortisone in the field of veterinary medicine, L. Michaud (*N. Am. Vet.* 33:29, 1952) feels that the hormone will have a number of valuable applications in animal therapy. Based on the results obtained in man, one could expect that cortisone would be beneficial in the following diseases of small animals: inflammatory eye conditions, including conjunctivitis, keratitis and iridocyclitis; certain nonparasitic dermatoses of unknown origin and difficult treatment; allergic disorders, such as bronchial asthma, hay fever, drug sensitization, serum sickness, skin and gastro-intestinal disorders and, of course, in rheumatoid arthritis and other rheumatoid diseases.

Michaud believes that cortisone should also be evaluated in certain localized infections such as coryza, stomatitis, otitis, and inflammation of the anal glands; in eclampsia, which may be due to a hormonal imbalance similar to that found in the resistance phase of the General Adaptation Syndrome; in shock and burns, both of which have been treated with gratifying results in man, and in mild wounds or ulcers characterized by hypergranulation.

Chloramphenicol for Coccidiosis in Dogs

For two and one-half years, E. A. Majilton (*Vet. Med.* 47:122, 1952), has been treating most cases of coccidiosis in dogs with chloramphenicol (Chloromycetin). The antibiotic was especially useful in puppies and small breeds. Chloramphenicol in doses of 25 to 50 mg. per pound of body weight each 24 hours for four days does not upset them nor interfere with the appetite. At the same time, it combats secondary invaders during a period when the puppies are particularly susceptible. With all cases of Coccidia, besides putting patients on a high protein and vitamin diet, normal serum is given at the rate of 2 cc. per pound of body weight. No attempt has been made to classify types of parasites.

In 74 cases, where it was possible to follow up and recheck the stools, 56 cases were cleared up after four days. Twelve cases were given two series of chloromycetin. Five cases developed typical chewing fits and two developed chorea. There were enough cases where chloramphenicol was dispensed and the clients returned after a long period of time with a well dog having a negative stool, to credit the drug with a higher percentage of efficacy than the above figures would indicate. Hence, Majilton concludes that Chloramphenicol is a useful drug in treating coccidiosis in dogs.

Aureomycin in Some Cow and Horse Infections

Since early 1950, says W. H. Chivers (*J. Am. Vet. Med. Assoc.* 120:31, 1952), aureomycin has been used in the treatment of a variety of conditions. In discussing the use of this antibiotic in the bovine and equine species, he points out that, where other types of therapy have been unsuccessful in the past, or where drastic surgical procedures with unfavorable prognosis would be indicated, aureomycin treatment has been instituted. Many cases were of long standing with permanent pathological tissue changes that had failed to respond to other treatment and had been presented as a last resort.

In all the cases reported by Chivers, aureomycin hydrochloride, buffered with sodium glycinate, was reconstituted with water for injection U.S.P., and injected intravenously. In adult herbivores, oral administratin is contraindicated as it may cause disadvantageous digestive disturbances. In the buffered hydrochloride form, aureomycin fails to be absorbed in sufficient amount to be effective and is irritating to tissues when injected intramuscularly, subcutaneously, or intraperitoneally. For this reason, it should be administered only intravenously. Care should be taken to prevent perivascular leakage as transient inflammatory reaction may occur, but necrosis or sloughing have not been noted. The recommended dosage is 5 mg. per pound of body weight, administered at 24-hour intervals.

Particularly good results were obtained with treatment-resistant infections associated with *Corynebacterium pyogenes*. Thus, to date, 14 cases of necrotic laryngitis in cows have been treated with aureomycin. Ages ranged from 4 months to 9 years. In 2 cases, infection had been noted one and two days before presentation for treatment, but the majority had been affected for longer periods, up to six weeks. Previous treatment with sulfonamides, penicillin, or combinations of these drugs, or iodine preparations, in 6 animals, had had no apparent effect.

Aureomycin was administered to 6 animals with suppurative conditions, localized in various parts of the body, and to 1 cow in a moribund condition from an advanced case of septic mastitis. All suppurative conditions healed satisfactorily with a minimum of surgical drainage and scarring. There were no postoperative complications where such procedures were used.

The antibiotic was also effective in the treatment of calf scours. Similarly, favorable response has been noted in the treatment of 2 horses with alveolar periostitis and sinusitis, and 1 horse with sinusitis due to trauma. After a course of aureomycin therapy, all pus formation ceased and the odor of necrotic bone disappeared. Two cows with clinical symptoms of listeriosis, without laboratory confirmation, showed an immediate response and made complete recoveries after a short course of aureomycin. Excellent results have been obtained in the treatment of sinusitis in cattle following dehorning operations. Interesting results have also been obtained in the treatment of mastitis, cystitis, and respiratory infections in both cattle and horses including those in the shipping fever group. The drug also appears to be of value in treating traumatic wounds of animals which are badly contaminated and showing indolent healing, as well as preventing the development of infection in such wounds when treated early.

Medicines for Pet Birds

R. R. Dykstra (*Vet. Med.* 47:162, 1952) advises that when pet birds, canaries, parakeets, parrots, and such are to be medicated, the medicine should be in liquid form. The usual procedure is to take the bird in the left hand, with the thumb and index finger holding the head steady, and at the same time pressing against the commissures of the buccal region. An eye dropper containing the medicine is held in the right hand, and the free end of the dropper is also used to pry the beak open. The medicine is then carefully injected into the back part of the mouth. Carelessly done, it may cause some of the medicine to reach the air sacs, with fatal results.

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Patent Thoughts and Trends

(*Anti-T. B. Drugs Patented*)

(*Continued from Page 743*)

above was determined in the following manner: Groups of 20 mice each were infected intravenously with 0.5 cc. of a 10^{-1} dilution of a human strain of tuberculosis known as M. Tuberculosis H37Rv in Dubos' medium while other groups of 20 mice each were infected intranasally with 4 drops of a 10^{-1} dilution of M. tuberculosis H37Rv in Dubos' medium. The Dubos' medium employed is that described by Dubos, R. J. and G. Middlebrook: Media for Tubercle Bacilli, Am. Rev. Tub. 56:334 (1947) containing the Tween 80 but modified by the omission of the albumin. Ten animals from each of the groups were allowed to feed ad libitum on the medicated diets for 21 days. Ten animals from each group were placed on the plain unmedicated Rockland Mouse Diet and on the Borden's Dog Food respectively, as controls. The treated animals consumed in this manner approximately 250 milligrams of isonicotinic acid hydrazide per kilogram of body weight per day when given the 1:1000 diet. This figure is based on the observation that mice normally consume 5.0 grams of food per day, so that a 1:1000 diet corresponds to a drug consumption of 250 mg./kg./day. The expression "mg./kg./day" means milligrams per kilogram of body weight per day.

All of the animals were sacrificed and autopsied on the 22nd day. All of the animals which were fed on the diets containing isonicotinic acid hydrazide showed no gross tuberculous lesions in the lungs. On the other hand, all control animals fed on the non-medicated diets showed wide-spread gross tuberculous lesions.

In other experiments, carried out in the same manner, but with different concentrations of isonicotinic acid hydrazide in the diet mixtures, the lower limit of activity of the mixtures, that is, the smallest dose of isonicotinic acid hydrazide giving 80-100 per cent protection of the animals, was found to be 4.1 mg./kg./day or 1 gram of isonicotinic acid hydrazide in 60,000 grams of diet in case of intravenous infection; and 6.3 mg./kg./day or 1 gram of isonicotinic acid hydrazide in 40,000 grams of diet in case of the intranasal infection.

Treatments of monkeys were carried out by Zieper and Lewis, who concluded that isonicotinylhydrazine was effective for combatting clinical tuberculosis of monkeys.

Anti-T.B. Drug on Human Beings

The $64 question was still to be answered: the effect of the drug for combatting tuberculosis in human beings. Selikoff, Robitzek and Ornstein, in the Quarterly Bulletin of Sea View Hospital, Volume XIII, January 1952, pages 17 and 27, present data and conclusions as to chemotherapy and toxicity on human beings. No serious toxic effects on liver, kidney and bone marrow are reported.

Robitzek, Selikoff and Ornstein, Quarterly Bulletin, supra, pages 27-51, report on the chemotherapy of the hydrazide compositions and single out their striking and clinical effectiveness in human tuberculosis. Of particular significance is said to be the selectivity of test patients to insure reliable and total evaluation. The patients are characterized as "hopeless." The authors reported that they found a profound and important therapeutic effect in human tuberculosis in these "mortally ill patients." Further, the rapid halting of the systemic ravages of tuberculosis, with loss of toxicity, return of temperature to normal, recovery of appetite, remarkable weight gain, are also reported, all with a rapidity and certainty to a degree never observed by the authors previously. Also noted are important chemotherapeutic effects on extra-pulmonary tuberculosis, including meningeal and oro-pharnygeal and laryngeal type, to a degree superior to experiences with known antibiotic or chemotherapeutic agents.

Specific Examples

An illustrative formulation for a tablet is taken from the patent and given below:

		Mg.
1.	**Isonicotinic acid hydrazide**	10
2.	**Cornstarch**	15
3.	**Lactose**	33
4.	**Cornstarch (as 10% paste)**	2.5
5.	**Stearic acid**	1.0
6.	**Dried cornstarch**	3.5
7.	**Sugar coating, approximately**	50

The powders 1, 2, and 3 are mixed, then granulated with 4. Add 5 and 6 and tablet. Coat with sugar coating.

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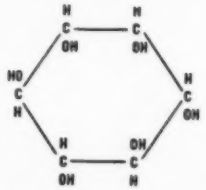

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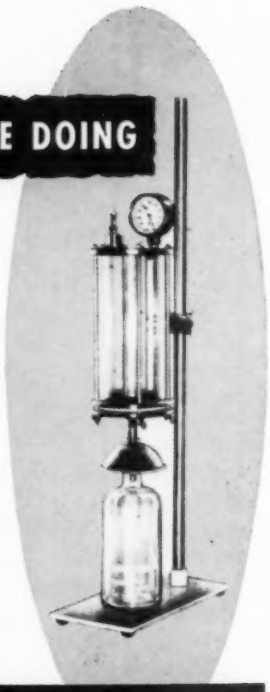

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An illustrative example of a formulation for a large lot of ampul solution is also given:

Eight liters of distilled water for injection, U.S.P., are placed in a 20-liter Pyrex glass bottle. To this water 500 grams of isonicotinic acid hydrazide are added with stirring until solution is effected. The pH is adjusted thereafter with sufficient reagent grade N/10 hydrochloric acid to achieve a pH of about 6.0. Then sufficient water for injection is added to bring the volume to 10 liters. The solution is filtered and filled into clean, dry, sterile, flint glass ampuls, each containing 2.2 cc. of the fluid. The ampuls are sealed and sterilized for 30 minutes at 115°F.

Claims

Because of the importance of this patent all of the claims thereof are set forth in full below:

1. A composition for combatting tuberculosis comprising not less than 0.10 per cent of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof and a sterile parenteral water diluent at a pH of about 6.0.

2. A composition for combatting tuberculosis comprising not less than 0.10 per cent of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof and a sterile parenteral water diluent adjusted to a pH of about 6.0 with hydrochloric acid.

3 A veterinary feed for combatting tuberculosis comprising not less than 0.10 per cent of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof.

4. A composition in dosage unit form for combatting tuberculosis comprising not less than 10 mg. of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof per dosage unit and a solid pharmaceutical carrier.

5. A composition in dosage unit form for combatting tuberculosis comprising about 10 to about 50 mg. of isonicotinic acid hydrazide per dosage unit and a solid pharmaceutical carrier.

6. A composition in dosage tablet unit form for combatting tuberculosis comprising about 10 to about 50 mg. of isonicotinic acid hydrazide per dosage unit and a solid pharmaceutical carrier.

7. A composition in dosage unit form for combatting tuberculosis comprising not less than about 10 mg. of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof and a solid pharmaceutical carrier, said composition being in tablet dosage unit form.

8. A composition according to claim 7 in which the diluent comprises at least one member selected from the group consisting of lactose, cornstarch, and stearic acid.

9. A composition for combatting tuberculosis comprising from about 0.1 per cent to about 50 per cent of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof and a significant amount of a pharmaceutical carrier.

10. A composition for combatting tuberculosis comprising from about 0.1 per cent to about 50 per cent of isonicotinic acid hydrazide and significant amount of a pharmaceutical carrier.

11. A composition for combatting tuberculosis comprising from about 0.1 per cent to about 50 per cent of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof and a significant amount of a solid pharmaceutical carrier.

12. A composition for combatting tuberculosis comprising from about 0.1 per cent to about 50 per cent of isonicotinic acid hydrazide and a significant amount of a solid pharmaceutical carrier.

13. A composition in dosage unit form for combatting tuberculosis comprising from about 1 mg. to about a 50 mg. of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof and a significant amount of a pharmaceutical carrier.

14. A composition for combatting tuberculosis comprising not less than 0.1 per cent of a member selected from the group consisting of isonicotinic acid hydrazide and acid addition salts thereof and a carbohydrate containing pharmaceutical carrier.

15. A composition in dosage unit form for combatting tuberculosis comprising not less than 10 milligrams of isonicotinic acid hydrazide per dosage unit and a solid pharmaceutical carrier.

Comments

Dr. Fox has taken his place along with other benefactors of mankind. He probably is the type who would minimize his own contribution. Indeed, it is understood that he has already given considerable credit to R. J. Schnitzer and E. Grunberg. Whether the agents developed by Dr. Fox prove to be the final answer of the T.B. riddle is not believed to be the point. Dr. Fox's contribution is in paving the way for the remarkable recovery of human beings given up as terminal cases. It may be that the very versatile and deadly tubercle bacillus will develop strains resistant to the hydrazides. If so, perhaps agents to inhibit these resistant strains will in turn have to be developed. If Dr. Fox's compounds do not prove to be the final answer, we can hope that such an answer is not far away and that someone, following the trail blazed by Dr. Fox, will find it. Along this trail, at every step of the way, a silent but nevertheless effective partner in this fight is the U.S patent system, under which investigations such as Dr. Fox's are encouraged to be undertaken and underwritten.

RECENT PATENTS

2,588,802—**G. D. Searle & Co.—Ketoaliphatic acids from hydroxy and alkoxy diphenyl alkanes. Cholertics parasiticides and steroid Intermediates.**

2,588,849—**Smith, Kline & French Labs.—Hydroxyethylamino Fluorenes. Sympatholytics.**

(Continued on page 841)

Perfumer's Shelf

Eucalyptus Oil from East Africa

Although Italy imports appreciable amounts of eucalyptus oil from Australia, the possibility of additional supplies from East Africa, notably Somaliland and Harrar, is suggested by A. Maresca (*Rivista Ital. Essenze* 33:198, 1951, through (*Perf. & Essent. Oil Rec.* 42:426, 1951). He points out that in Eritrea distillation of the fresh leaves at the right time of year, yielded 1.05 per cent oil with a 67-68 per cent content of eucalyptol. In Addis Abeba the yield was 0.86 per cent with a eucalyptol content of 79.8 per cent. In Bet-Ghirhis (Asmara) it was 0.68 per cent and 77.2 per cent.

Since little or nothing has been reported on eucalyptus oil from this part of East Africa Maresca describes some of his own investigations. The two essential oils examined were obtained by steam distillation of leaves, collected from adult eucalyptus trees cultivated at Genale (Somaliland) and Harrar (Ethiopia). Collection and distillation were in January. On decomposing the eucalypto-resorcinol compound with aqueous sodium hydroxide 71.5 per cent and 68.1 per cent of eucalyptol, respectively, were obtained. Cooled in −15°C. medium, the first congealed to a dense whitish mass, and the second to a viscous consistency with numerous crystals of cineol visible. The presence of aldehydes in both was revealed by Schiff's reagent and ammoniacal nitrate of silver. When shaken up vigorously with sodium bisulfite solution there is slight diminution in volume. The Genale oil was subjected to fractional distillation under 12 mm mercury vacuum, in a 75 cm. Vigreux column, into three fractions boiling at 56-60°, 60-90°, and 90-101°, with yields, respectively, of 76.0, 9.5, 2.7 per cent leaving a residue of 7.3 per cent, with characteristics as follows:—

Fraction	*Specific Gravity*	*Opt. rotat.*	*Refract. index*	*Color*
1	0.8935	6.15	1.4606	Colorless
2	0.9104	0.73	1.4615	"
3	0.9218	15.61	1.4720	Yellow

Alpha-pinene was the principal constituent of the first fraction, and cineol of the second. It is concluded that both oils are up to the standard of the *Italian Pharmacopoeia* and could replace oils imported from Australia. The Somalia oil is probably slightly the better of the two.

Lime Oil from Zanzibar

Samples of oil were prepared from the limes of the type commonly grown in Zanzibar. The method employed was to take whole fresh limes, most of which had not turned yellow, cut them up in a mincing machine, and distill the mass from glass flasks heated in oil baths containing coconut oil, a little steam being passed through the flasks to help carry over the oil. A sample of the oil thus prepared was examined by E. Brown, T. J. Coomes and H. T. Islip (*Colonial Plant & Animal Prod.* 2:36, 1951). The oil had a clear, pale green-yellow color and its odor was typical of lime oil. The analytical constants were as follows:

Specific gravity	**0.8676**
Opitcal rotation	**+41.23°**
Refractive index	**1.4765**
Aldehydes, as citral	**2.0 per cent**
Non-volatile residue, at 100°C.	**4.2 " "**
Solubility in 90% alcohol	**Soluble in 4.2 vol. and more**

According to Brown and his colleagues, from the results of examination of the oil and from the commercial opinions expressed on it, it would appear that basically the oil is of good quality. The odor is a little inferior to that of commercial West Indian distilled lime oil owing to the high citral content, and the flavor is considered to be somewhat lacking in "body" and strength. Probably these deficiencies are due to the fact that the oil was prepared on an experimental basis in the laboratory. Distilled lime oil is a "delicate" oil, not easy to prepare, which deteriorates rapidly on exposure to air and light. However, it is to be expected that, if produced by the carefully controlled methods of modern commercial practice, an oil of considerably better quality would be obtained.

Extraction of Cedar Leaf Oil

In discussing cedar leaf oil extraction, J. A. Cochrane (*J. Forest Prod. Research Soc.* 1:120, 1951) states that the oil is obtained by steam-distilling the leaves of the western red cedar, *Thuja plicata*. Previous subdivision of the leaves has no effect on the yield, which is about 2.5 per cent of the dry weight of the leaves. However, this subdivision does increase the rate of distillation. Prolonged leaf storage decreases yield. Thus after 70 days yield dropped almost 70 per cent. This loss in oil accompanies loss of moisture from leaves. Mature trees give the same yield as young trees. Trees growing under adverse conditions give the highest yield.

Identifying Ambergris

A note on the identification of ambergris is presented by P. J. Hardwick and E. Q. Laws in the *Analyst* (76:662, 1951, through *Perf. & Essent. Oil Rec.* 43:1, 1952). They state that genuine ambergris is known to consist of ambreine, *epi*coprostanol, arachidic acid, ambroporphyrines, a ketonic fraction and liquid paraffin. Hence, their method entails the chromatographic separation of ambreine and *epi*coprostanol. The sample is ground and dried in a desiccator and then extracted in a Soxhlet extractor with ethyl ether. The ethereal solution is extracted with normal sodium hydroxide solution to extract the fatty acids and the ether extract evaporated to dryness to give a clear brown gummy material. For a good grade ambergris the ether soluble material may run as high as 55 to 95 per cent while an inferior grade may have as little as 10 per cent.

The residue is dissolved in aromatic free light petroleum, boiling range 40° to 60° C. and the solution chromatographed on an alumina column, so as to separate the ambreine and *epi*coprostanol. The ambreine which gives a characteristic blue-white fluorescence in ultra-violet light can be prepared in a crystalline form by slow evaporation of the solvent and gives colorless crystals, melting at 83° C. The *epi*coprostanol is obtained by removal of the solvent

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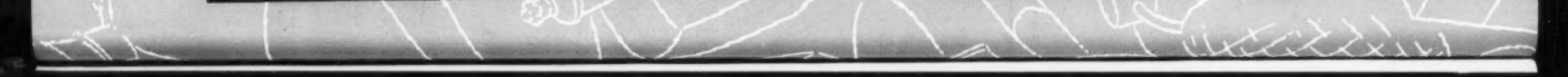

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and recrystallization, as a white crystalline body of melting point 111° C.

The percentage of ash in good quality ambergris ranges from 0.5 to 5.0 per cent while for inferior material it was found to be as much as 57 per cent. The ash consists essentially of the phosphates of calcium and magnesium with a small proportion of sodium chloride and traces of copper, silicon, manganese and chromium.

In concluding, Hardwick and Laws state that the identification of ambreine is in itself sufficient that a sample is genuine ambergris. The presence of *epi*-coprostanol and of an ash of the composition indicated are good confirmatory evidence.

Peppermint Oil from Oregon and Washington

According to L. Fischer (*Drug Standards* 20:7, 1952) government reports show that in 1948, for the first time, the total production of peppermint oil in Oregon and Washington exceeded that of Indiana and Michigan, even though the total acreage of mint was less in the two Northwest states. There are several contributing factors for the influx of peppermint production in this area. The gradual decline in the production of the oil in the Midwest caused by a virus known as Verticillium wilt which attacks and destroys the plant is apparently unknown in the Northwest mint fields. The nature of the soil, the climatic conditions, and the abundant water supply are conducive to the prolific growth of peppermint of high oil content in Washington and Oregon. Yields as high as 80 pounds per acre have been reported in certain areas.

It is pointed out that in 1948 Tornow and Fischer reported their findings regarding the physical and chemical properties of natural peppermint oil produced in the four main mint districts of Oregon and Washington. These districts were: C—Clatskanie, *S*—Salem, *E*—Eugene, and *K*—Kennewick.

In 1950, Krupski and Fischer reported their findings on the unusual properties of the type K (Kennewick) oil produced in eastern Washington. For the present study natural oils were obtained to represent districts *C*, *S*, and *K*, which produce oils of distinctive properties. Each of the samples was a composite of natural oil that was as nearly representative as possible of the entire year's production of each district. The three types of oils were fractionally distilled under reduced pressure and several components were identified by means of the melting points of appropriate derivatives. These were *dl*-alpha pinene, cineol, *l*-limonene, menthofurane, menthone, pulegone, and menthol. The fraction containing menthofurane, a highly dextrorotatory substance, +94°, was of special interest since it was more abundant in type K and is apparently the main cause of its low levorotation. A procedure for the quantitative estimation of menthofurane was developed and the amount present was found to be:

Type C— 5.2%
Type S— 4.2%
Type *K*—10.6%

The practical significance of the finding of menthofurane as the causative factor for the low levorotation is centered around the possibility of increasing this constant by the removal of a portion of this compound.

Experimentally it was found that type *K* oil with an optical rotation of—18° could be altered to—19.6° by removal of 5 per cent of the oil distilled at the boiling range of menthofurane (205-206°). This indicated that it is possible to alter sufficiently the optical rotation of a peppermint oil ro make it comply with the U. S. P. tequirement.

Additional Essential Oil Specifications

Four additional sheets of official specifications for essential oils and aromatic chemicals have been issued by the Essential Oil Association of U. S. A. These sheets, numbers 58 to 61 inclusive, provide standards for American dilweed oil, methyl cinnamate, phenyl ethyl acetate, and for ionone's. These standards were approved at the January, 1952 meeting of the Association. Copies of these specification sheets, as well as an index of specifications published so far, are available from the Essential Oil Association of U. S. A., 2 Lexington Ave., New York 10, N. Y.

Water-Soluble Camphor Substitutes

Injections of camphor, says M. Fioretti (*Boll. chim.-farm.* 90:424, 1951), are painful and slow in action. Hence a water-soluble compound with the same pharmacological action but without these unwanted side-effects is very desirable. In considering various compounds that might be useful, Fioretti discusses camphoric acid, which is prepared by oxidizing camphor with nitric acid. The melting of the acid obtained from natural camphor is 187°C. while that from synthetic camphor is 202°C. and it is less soluble in water. This acid and its sodium salt have no action on the heart and are diuretic. Camphorsulphonic acid can be prepared by acting on camphor with concentrated sulfuric acid and acetic anhydride. The salts are soluble in water but are rapidly excreted in the urine and only a very slight camphor-like activity is shown. Another derivative is camphor-carbonic acid, prepared by the action of carbon dioxide on sodium camphor in an organic solvent. This compound, unlike the others, is not stable to heat and the solution begins to decompose at 80°C., but solutions can be heated for half-an-hour in sealed vessels in a current of steam. It is, however, without physiological action and is passed unaltered in the urine. Thus none of these substances can be considered as a water-soluble substitute for camphor.

Rosewood Oils from Amazonas

In his report on rosewood oils from Amazonas (Brazil), rich in *d*-linalol, Y-R. Naves (*Perf. & Essent. Oil Rec.* 43:4, 1952) notes that while rosewood oils from French Guiana and neighboring territories are strongly levorotatory, those coming from Amazonas are slightly levorotatory or slightly dextrorotatory. While studying the production, control and trade of rosewood oil in the states of Para and Amazonas, Naves received an oil produced in the neighborhood Parintins-Barreirinha, in the south of Parana do Ramos. This oil is of excellent quality. However, its dextrorotatory optical activity is higher than that of any other oil examined up to the present. It had the following properties.

Specific gravity	**0.8758**
Index of refraction	**1.4632**
Specific rotation	**+ 5.50°**
Alcohols (by acetylation)	**94.0%**
Distillate between 1940 and 205°	**91.0%**

Both linalol and alpha-terpineol were identified by several of their physical characteristics and by the preparation of their phenylurethanes. These latter were respectively dextrorotatory and inactive for polarized light. The proportion of *d*-linalol exceeded that of *l*-linalol by about one-third in their mixture.

The dextrorotatory activity of the oil is due chiefly to the linalol and should be reckoned in relation to the high content of this oil in alcohols. Other dextrorotatory oils (reaching at most+5°), previously analyzed, were on the contrary especially rich in esquiterpenes and it is these which are the principal cause of the dextrorotatory activity.

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Abreast Of The Markets

Botanical Market Extremely Quiet, Consumers Buying In Small Quantities; Cod Liver Oil Lower; Menthol Soft

Last month a sluggish attitude pervaded the markets, especially in the botanicals, and secondarily so in the essential oils. One botanical spokesmen reported he was just catching up with orders which had been made during the hectic period in 1950 following the outbreak of the Korean War. In some cases, it was necessary to wait over a year before complete shipments arrived from foreign ports. But this was not the disturbing part. He further reported that, while business is good, there is an absence of replacement orders to be fulfilled in the months to come. All through the trade consumers appear to be much more inventory conscious than they were a year ago. While their inventories are just beginning to get low, following their exorbitant purchases of 1950, still these consumers are sitting back now, waiting to see which way the market is going. In almost every case, orders are smaller than what they were last year, or requests are received to reduce past commitments, if possible.

The same trend is apparent in the essential oils, though not to such a strong degree. Consumers' stocks are becoming depletd, but instead of jumping in to replace them on the same scale as before, the buyers seem to be purchasing in smaller amounts which are sufficient to keep ahead of the consumption rate but do not allow an over-extended inventory. Dealers are wondering if this trend will continue, and if so, how marked a trend it will become.

There has been no change in the status of clove oil, the oils from China, or in the botanical agar. The clove situation continues to worsen in this country, with no official relief yet from Washington. This has resulted in the closing down of most of the domestic distilleries, as far as this oil is concerned. The anise and cassia oils, as well as the botanical cantharides, are becoming a good deal tighter, with no chance of direct replacement from China, and very little opportunity from any other source. As reported in a previous issue, agar has displayed a firmer tone, and this trend showed stronger signs last month as reports of higher-priced replacement costs began to appear.

Prices quoted in this section were current on the first of this month.

Cod Liver Oil Down 10c

During the past month the price of cod liver oil fell off to $1.55 a gallon, which is 40c less than the $1.95 price of about four months ago. This is the lowest the price will go, according to some spokesmen, who say the Norwegian government has imposed a minimum export price on shippers so that the price of the item cannot go any lower than it now is unless that government alters the ruling. Cod liver oil is influenced to a great extent by the fats and oils market, which, itself is quite weak at the present time.

There is enough cod liver oil around at the present time to satisfy all needs because this is a very dull season for this commodity, with only a few consumers buying for later delivery. Production in Norway this year was normal, but not as good as that of last year, according to one authority, 1951 having been far greater than normal.

The government publication, *Foreign Commerce Weekly*, of May 19, states, "It is believed that if fishing conditions remain favorable, production of cod liver oil in 1952 will reach approximately the same figure as for the 1951 season, when total production was reported as 3,170,100 U. S. Gallons. Production for this season, as of March 22, is given as 1,320,875 U. S. gallons, compared with 1,585,050 gallons for the same period of 1951 and 1,056,700 gallons for the corresponding season of 1950.

"Exports of steamed medicinal cod liver oil in the calendar year 1951 were 1,727,261 U. S. gallons, compared with 1,758,645 in 1950 and 1,374,582 in 1949. The three principal destinations of steamed medicinal cod liver oil in 1951 were the United States, 330,388 gallons ($570,225); the Netherlands 419,117 gallons ($347,174); and Bizonia, 182,883 gallons ($288,096)."

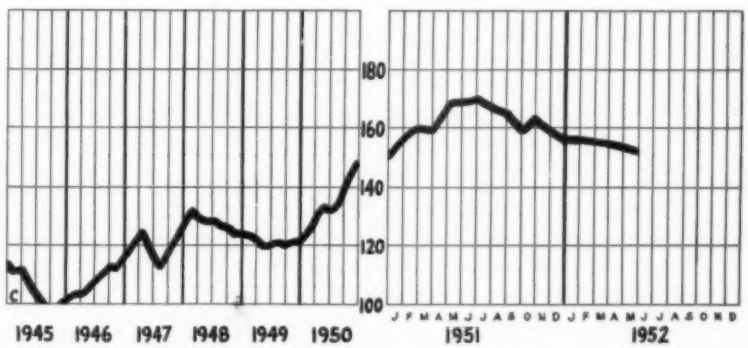
Menthol Quiet

There has been very little activity in menthol lately, with consumers reportedly putting off replacements until they see what effect the weakening citronella market will have. With the synthetic material priced at $6.80 a pound, this is competing strongly with the natural menthol, now being quoted at $6.50 for the Brazilian and $7.50 for the Chinese.

This synthetic competition is the

(*Continued on page 823*)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



The cosmetic raw materials index went down from 153.9 to 152.0. Balsam copaiba and Japan wax were lower.

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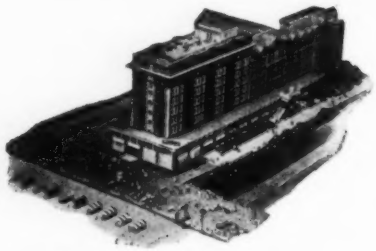

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Petroleum Strike Cuts into Glycerine Production; Alcohol Market Said to Be at Proper Price Level; Ergot Lower; Agar Still Scarce

The petroleum strike, which was tapering off during the last week of May, had caused the complete shutdown of synthetic glycerine production. With demand for refined glycerine stepping up, natural glycerine came into the fore. For the time being, suppliers of the natural product were reacting favorably to the turn of events because it gave them an opportunity to get rid of some of their excessive stocks. If the strike had continued for any length of time, however, the situation would have gotten out of hand, and glycerine stocks would have been severely cut.

The price of glycerine, CP, remained at 34¼c during the entire month, and toward the end of that time there seemed little chance that it would be forced up by the existing supply position.

Alcohol Believed Stabilized

Concensus in the trade sums up the alcohol situation with the belief that the present 55c-57½c price for the item is just about what it should be at the present. Spokesmen now say that the price should remain as such for some time, because they feel it has reached a stable point. On the molasses side of the picture, however, it is quite a different matter, because the 20c-offer the Cubans are making to the American markets is today much too high. A sudden break in the molasses price structure is expected any time, and the longer the Cubans put it off, the more harsh will be the outcome for them. Not only is their more-than-300,000,000-gallon supply they now have just about the largest yield they have ever collected, but another crop will be due in December to add to the storage problem. Unless the Cubans reduce the molasses price now, making it favorable to U. S. fermenters, they may have very serious trouble on their hands later in the year.

The alcohol and Tobacco Tax division of the Bureau of Internal Revenue, Treasury Department last month released the following data on the supply, production, withdrawals, and stocks of ethyl, completely denatured and specially denatured alcohol during the month of March, 1952, in comparison with March, 1951.

Production

	Proof gallons	
	1952	1951
Ethyl	41,128,587	35,722,143
*Completely denatured	46,946	65,182
*Specially denatured	21,867,421	21,373,218

Withdrawals

	Wine gallons	
	1952	1951
Ethyl, tax paid	1,880,626	2,952,289
tax free	50,487,817	41,669,629
*Completely denatured	33,531	76,186
*Specially denatured	21,457,099	20,371,483

Stocks

	Gallons	
	1952	1951
†Ethyl	95,360,381	65,982,170
*Completely denatured	51,625	32,656
*Specially denatured	13,983,443	2,484,405

*Wine gallons. †Proof gallons.

Ergot Continues Down

Extending the decline which began in April, ergot declined 75c in May, to the level of $7, a development which developed because the mateial was once again in a free market. Last year, according to several viewpoints, a European firm has cornered the market in an effort to obtain and hold as much of that year's crop as possible—a move which forced the price up to an artificial high. This year, the pressure has been relieved, and this most recent price reduction is a further move toward a more stable and appropriate price level.

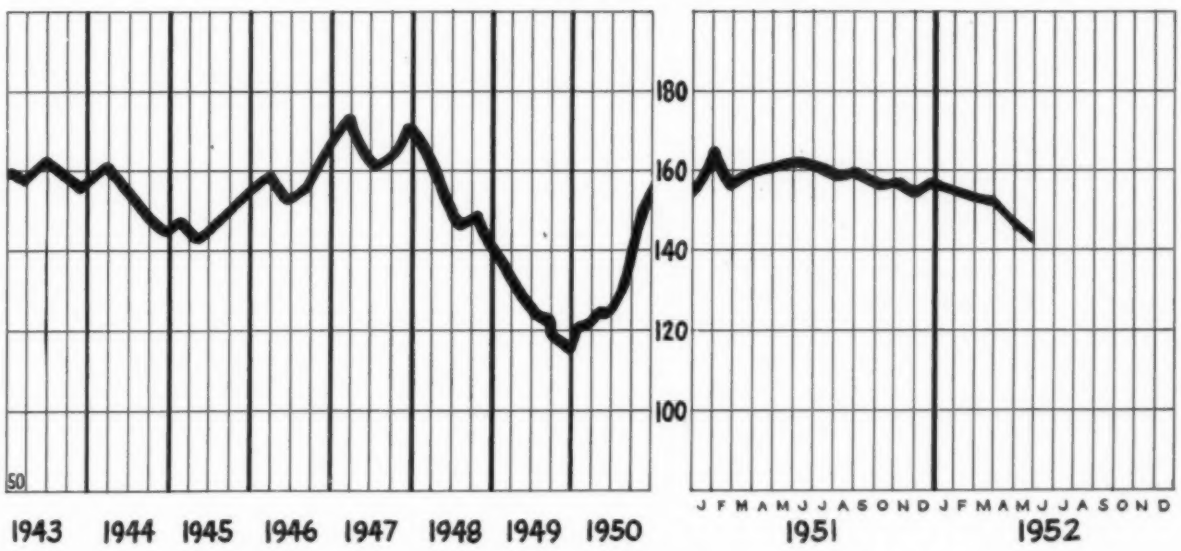
Quicksilver Remains at $200

There was no change in the status of this metal during the month, although a little more interest was reported in the item toward the end of May. The price range continued to extend from $200 on up to $206, depending on the size of the order.

Agar in Short Supply

The price of Agar began inching upward last month, the #1 grade, powdered, having advanced from $1.75 to $1.90, and extending from that figure up to $2.25. The strip agar, #1 was quoted at $1.60. Several factors appear to be causing this increase, among them, the fact that the food industry has stepped up its demand, and there are rather limited stocks of the item on spot at the present time. Some sources reported that the material available in Japan is also very limited, but it is

50 Raw Materials—Weighted Price Index. 1926 = 100.



The price index of fifty commodities for May went down from 145.0 to 141.5.

May Price Changes

UP	DOWN	
Agar Agar, No. 1. 15c	Almond Oil, Bitter 25c	Japan Wax 8c
Anise Seed Star 10c	Cardamom Oil $7	Lemongrass Oil 30c
Burdock Root 1c	Citronella Oil, Ceylon 5c	Lime Oil, Distilled 25c
Cantharides, Chinese 65c	Java 30c	Nutmeg Oil 25c
Peppermint Oil, Natural 35c	Cod Liver Oil 10c	Patchouli Oil $1.50
Spearmint Oil $1	Cubebs Oil 50c	Petitgrain Oil 75c
Wormseed Oil 50c	Ergot 75c	Pimento Berry Oil 20c
	Ginger Oil $3.25	Pimento Leaf Oil 10c
	Golden Seal Root 75c	Rosemary Oil 10c
	Ipecac Root 25c	Senega Root 25c
		Wormwood Oil 35c

rather difficult to check up on their particular condition, although it is true another crop is not due until the first part of next year.

Balsam Copaiba Down 10c

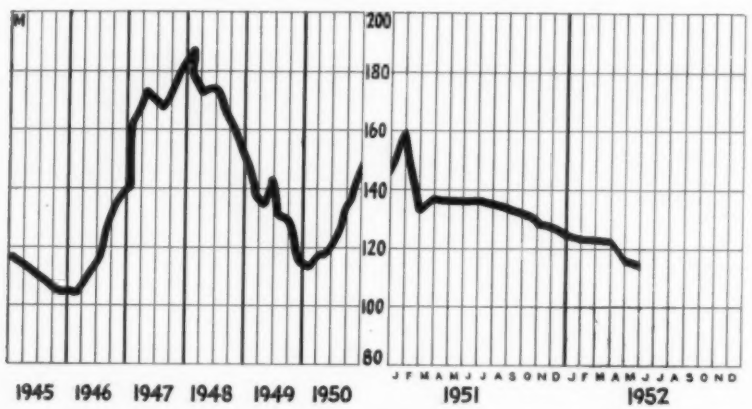
Owing to increased material available, the price of balsam copaiba para fell off to $1.60, or 10c below the former $1.70 price. Apparently the supply has been keeping ahead of the increased demand for the item.

Menthol Quiet

(*Continued from page 819*)

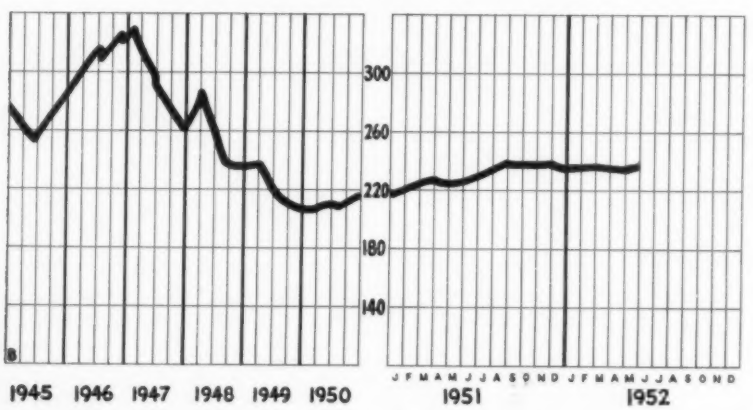
main reason Brazil has brought the price down, another being that England and European countries have greatly reduced their purchases, leaving the field to the American market. There is very little material trickling through by way of Europe from China, and Japan has a small amount of menthol at $7.30 available, but not enough to make much of an impression.

15 Medicinal Chemicals—Weighted Price Index. 1926 = 100.



The medicinal chemicals index dropped slightly from 114.8 to 113.5. Cod liver oil was lower.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index went up slightly from 237.2 to 238.3. Agar was up, ergot and ipecac root down.

Anise Seed Star Higher

In keeping with the Far Eastern conditions, anise seed star is reflecting the difficult supply conditions emanating out of Red China, having advanced in price by 10c to the figure of 70c. The fact that Great Britain has decided to close up its business interests in China may increase the burden on anise seed star and also anise and cassia oils and any other commodities which originate in this area.

Senega Root Lower

Senega root declined to $2.15 during May, a development, like ipecac root, which sources believed would end at that point, at least until reports on new-crop conditions could be made available. In each of these botanicals there are definite signs that consumers are holding off on their replacements, or are drastically reducing their purchases in a concerted effort to maintain as little inventories as possible and yet keep sufficient quantities on hand to be safe.

Ipecac Root Declines

Ipecac root went down to $6.25 last month, and, according to spokesmen in the trade, this is expected to be the low price for a while, at least until new reports are received from the origin on the condition of the new crop material.

Nutmeg Oil Sluggish

There was little interest for this oil last month, even though the price dropped 25c to the $4 level. Reports indicated there was a lot of material on spot.

Patchouli Oil Off

Some essential oil houses report patchouli oil at $9.25, while a few others established it at $7.75, apparently because of more favorable conditions at the origin.

Lemongrass Down 30c

Lemongrass oil went down to $1.90 a pound last month, mostly because there was much material available on spot and also because replacements from the origin were readily accessible. There was a lively demand, which, according to authorities, was likely to persist for quite some time.

Peppermint A Little Higher

There have not been any complete reports on the new-crop peppermint oil as yet, but the price of natural oil went up to $7.60 a pound last month,

suggesting the old crop material is becoming limited, both in quality and in quantity.

Ginger Oil Down to $16

Although ginger root has become firmer in the past few months, ginger oil last month displayed a much easier tone and dropped from $19.25 down to $16 a pound. Apparently this oil was derived from low-cost ginger root, but now that the root has increased in value, according to reports, an increase in the price of future ginger oil may be expected.

At the present time, stocks of ginger oil appear to be much more than enough on spot to cover the fairly brisk demand. There may be developments in a few months worth noting.

Clove Oil Situation Still Serious

With no relief having reached the industry from Washington, the clove oil situation remained serious last month, as far as the American industry was concerned.

The prices which were being quoted at that time, mostly nominal, ranged from $5.50 to $6. It was safe to say that the American industry had just about shut down competely on all distillation operations and was being forced to buy oil of, often of questionable nature, from distillers in foreign countries. In addition, it was very difficult to obtain replacements on the clove buds themselves.

Citronella Oil Drops

Increased competition and lower floor prices in Formosa of the citronella oil have cause both the Ceylon and Java oils to be reduced accordingly. The former was down to 85c toward the end of last month, and the Java oil was being quoted at 65c. Reports have it that the competition developing in the different markets is of a very keen nature, which, coupled with an ample quantity of oil on spot, has produced a buyer's market. It remains to be seen how much farther down these prices will be reduced before they level off.

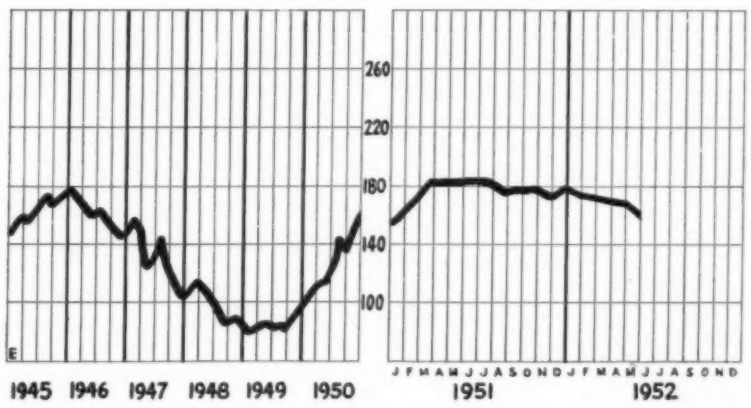
Cardamom Oil Much Easier

With a decline of $7 cardamom oil showed a much easier tone last month, the result of two factors: interest in the oil on the part of consumers was moderate, but nothing to get excited over, and replacements from the origin were readily obtainable.

Anise Oil Unchanged

Contrary to the patterns of other Far Eastern commodities, anise oil remained at the same price level last month, ranging from $1.75 to $2.35. The upper end of the range was a bit higher than previously. The only reason anise oil has not skyrocketed in price seems to be the very plentiful supply of anethole on the spot market at the present time, which has been taking the pressure off the oil. From all indications, were it not for this substitute, anise oil would now be way out of range. Replacements from China are virtually impossible to find; replacements from secondary areas, such as European countries and England are also very scanty; and the demand is such that without the anethole, a critical shortage in this oil would definitely develop.

15 Essential Oils—Weighted Price Index. 1926 = 100



The essential oils index fell from 167.5 to 167.1. Peppermint oil was higher; citronella and clove oils, lower.

Lemon Oil Expected to Remain Short

The June issue of *D&O News* reports, that Sunkist Growers, Inc. anticipate a lemon production similar to that of last year. "As supplies have been tight for many months," the account continues, "this means there will continue to be no over-abundance of oil. This is due partly to the large demand for fresh fruit which takes the bulk of California's citrus crop. Also, the revised estimate of that crop for 1952 is 10 per cent lower than originally anticipated in January. In view of these facts, it is expected that a situation of light supply will prevail, with no relief in sight, for a number of months to come."

Lime Oil at $7.50

Distilled lime oil was reduced to $7.50 even though there was considerable call for the item among the candy and soft-drink manufacturers. There have not been any reports yet on the expected size of the new-crop material which is still quite a ways off.

Spearmint Up to $8.50

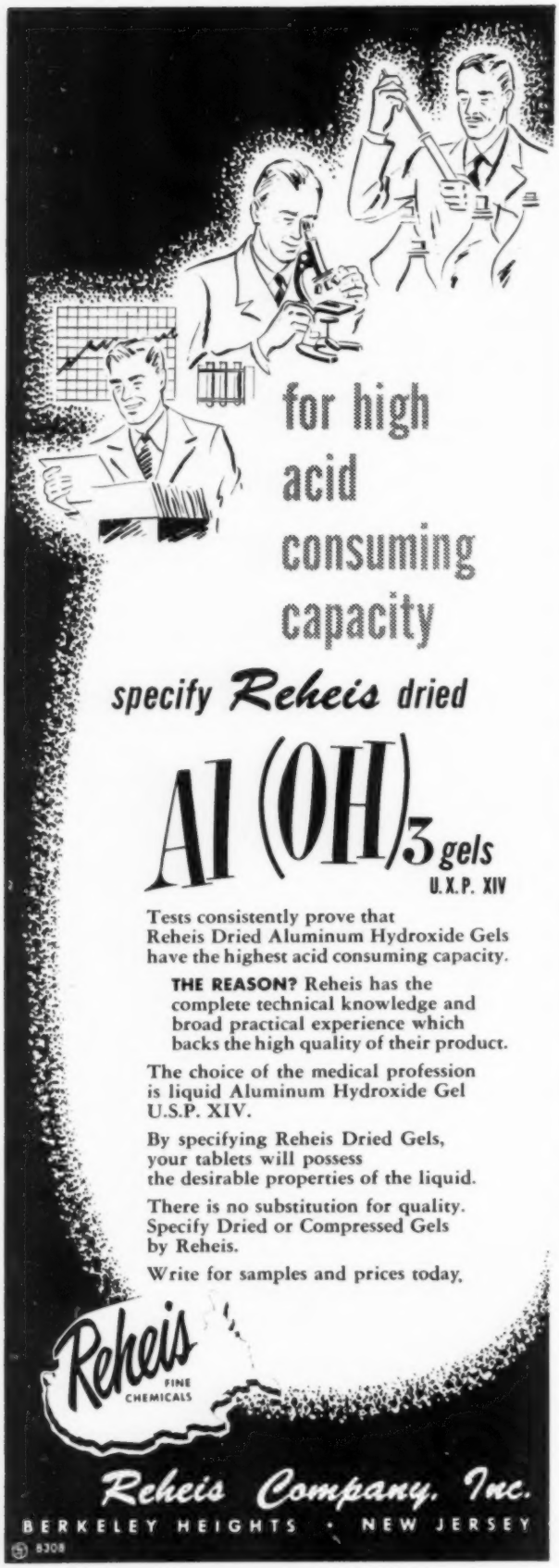
Owing to a very heavy demand for spearmint oil, the price of this item advanced to $8.50 a pound, and especially because spot stocks are very limited.

Wormseed Oil up 50c

The price of wormseed oil went up to $8.25, presumably because of the great difficulty of obtaining replacements at the present time from the country. There have been no reports as to the expected size of the new crop which will arrive toward the end of the summer. Ordinarily the price at this time declines somewhat; this advance is therefore all the more significant.

Orange Oil Stable

There has been no change in the status of orange oil during the past few months; however, there are reports that manufacturers of the frozen juice have expanded their operations so greatly that some of them may revert to production of the oil once again. Last year at this time the oil was a glut on the market. Now, it seems that the pendulum has swung partly in the other direction. While there is sufficient oil on hand at the present time to handle a normal demand, it may become tighter during the summer, if consumption becomes much greater than expected. As it stands now, there is a need for more oil, but the situation is pretty well balanced at present.



PABA

(*Continued from page 751*)

therapist because it antagonizes the bacteriostatic action of sulfonamides. Why this is so is unknown, but the fact para-aminobenzoic acid is involved in several oxidation-reduction enzyme systems suggests that it may possibly compete with sulfas in their fundamental action within cells. This feature Salter notes, has been applied in its use as an antidote to poisoning by carbasone and several phenyl arsonates.

Interest in PABA was greatly stimulated by Ansbacher's[4] report that para-aminobenzoic acid was a chromotrichial factor for the rat. Naturally, a possible association between PABA deficiency and gray hair aroused considerable interest, not only with scientists, but with the public as well. Many investigations followed, including studies on both animals and humans, but the results were contradictory and inconclusive.[15-16] Sieve,[17] for example, reported that a moderately rapid return to normal pigmentation was obtained in humans with PABA. In contrast, Brandaleone and his associates[18] found that in a group of 19 elderly people with gray hair, only two persons showed a significant color change during a period of intensive vitamin therapy.

Several years later, Zarafonetes[19] made some interesting observations on the darkening effect of PABA on the hair of five of a group of 20 patients incident to the use of this agent in the treatment of their respective primary diseases. These subjects had received 6 to 21 Gm. of PABA daily. The effect on hair color was first noted six weeks after PABA therapy was begun in one case, but a longer interval was usually required to bring about the change. The effect was not uniform, however, since other patients, who received PABA for comparable periods, failed to exhibit significant change in hair color. There appeared to be no correlation between the darkening effect and the duration of grayness prior to treatment with PABA. The color alteration was observed to occur during the administration of PABA alone, and the amounts used were for greater than those used by others who were deliberately seeking to alter gray hair.

Recently, in reviewing the data on nutritional achromotrichia in man, Robinson[5] expressed the opinion that any claims that preparations containing para-aminobenzoic acid are of value in restoring the gray hair of elderly people to its former color are "completely unjustified."

However, there are indications that PABA may be of value in other phases of dermatology. Sharlit,[20] for example, said that for several years he had been prescribing para-aminobenzoic acid in a variety of dermatoses, including hair and scalp conditions. He noted that a surprisingly common subjective response to this therapy has been a feeling of greater vigor and a loss of tired or enervated states.

In a series of studies made by Zarafonetis and his colleagues, encouraging results were obtained with PABA in a number of diverse dermatologic conditions

of unknown etiology. For example a beneficial effect has been seen in lymphoblastoma cutis, in certain forms of lupas erythematosus, in active dermatomyositis, in scleroderma, and in dermatitis herpetiformis. In summarizing the findings in these conditions, Zarafonetis[7] stated that the most gratifying results had been attained in lymphoblastoma cutis, scleroderma, and certain cases of dermatomyositis. The results of PABA therapy in acute disseminated lupus erythematosus have been disappointing. However, there has been sufficient benefit in two cases of the acute form to warrant trial of the drug in additional patients. He notes that dermatitis herpatiformis is usually controllable with other forms of medication, but in instances of intolerance to the usual treatment PABA therapy may be used.

Of interest in this connection is a more recent report[21] on 16 patients with dermatitis herpatiformis who were treated with large doses of sodium or potassium para-aminobenzoate or both. All experienced partial to complete suppression of the disorder while taking the compound. Relapse usually occurred about ten days after cessation of therapy. However, remissions were maintained, through continued administration of the drug, for as long as 30 months.

In 1950, Weiner[22] reported that PABA had given promising results in the therapy of atopic dermatitis, a condition that has always been difficult to treat. In considering the results in 16 patients with this condition, he found that the response in half of them was excellent, with diminution or disappearance of the infiltration in the involved areas and reduction or cessation of the pruritus a rather constant effect. In about one-fourth of the patients, there was initial improvement but subsequent relapse which did not respond to continued treatment. In about 25 per cent of the cases, the effects of this therapy were unsatisfactory or equivocal. Where the therapy is effective, it apparently must be continued indefinitely, or at least over long periods of time.

Working independently, Loewenthal[23] found that PABA is of value, not only in atopic dermatitis, but in some forms of eczema as well. In considering his findings, he remarked that the simultaneous administration of PABA and an antihistamine might improve therapeutic results in atopic dermatitis.

Also indicative is Termine's[24] use of the drug in two cases of dermatosis due to sensitization following sulfonamide therapy. He also used PABA successfully in three cases of dermatosis resulting from penicillin therapy. This led him to suggest that para-aminobenzoic acid has general desensitizing properties.

Zarafonetis[7] mentions that orally administered PABA is useful in certain dermatological conditions in which sensitivity to light is a symptom. It is noteworthy, therefore, that topically applied para-aminobenzoic acid is a useful sunscreening agent.[25] Thus, in their report on its sunburn-protecting action, Rothman and Henningsen[16] stated that PABA has the advantage of being non-irritating, non-soiling and rela-

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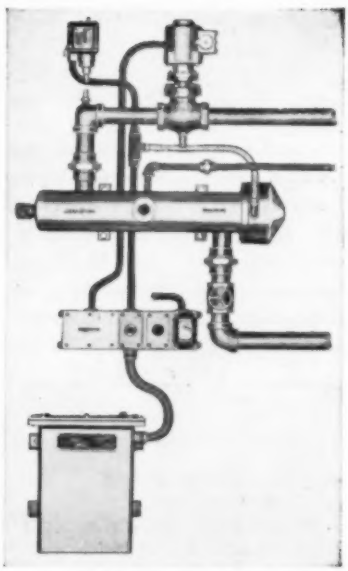

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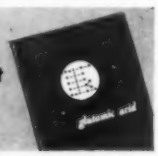

San Jose Laboratories of International Minerals & Chemical Corporation, devoted exclusively to the manufacture of amino products including glutamic acid and glutamic acid hydrochloride.

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tively stable under solar radiation. They found that 15 per cent of para-aminobenzoic acid in an ointment base (Ruggle's cream) increased the sunburn protective action by 50 to 100 times as compared with the plain vehicle. In experiments with highly susceptible individuals, the cream proved to be a "highly effective protectant" against sunburn.

Other workers have also made use of PABA as a sunscreening agent. Shaw[27] reported that a 5 to 10 per cent solution of the chemical protected exceptionally sensitive persons against eight to twelve hours exposure to sunlight in Florida and Mexico. PABA is the active ingredient of sunscreening oils and creams described in a French patent.[28] Hemphill[29] used the sodium salt in combination with other agents and found that the following preparation was effective for inhibiting sunburn:

Phenyl salicylate	**0.3 part**
Antipyrine	**1.5 parts**
Sodium para-aminobenzoate	**1.5 "**
Oil or rose	**Sufficient**
Emulsion base (Almay), to make	**30.0 parts**

PABA is readily miscible with many vehicles such as 70 per cent alcohol, vanishing cream, cold cream or emulsion bases.[30] On rare occasions it is capable of provoking contact dermatitis.[31]

Although PABA no longer holds the dominant position, it is still an important drug for the treatment of the rickettsial diseases, a group of grave infections with a high mortality rate. As remarked recently by Blattner,[32] PABA is a potent rickettsiostatic agent against epidemic, murine (endemic), and scrub typhus and Rocky Mountain spotted fever. PABA, says he, is rickettsiostatic because it increases cellular oxygen consumption which interferes with the multiplication of rickettsial. These are microorganisms that occupy a position midway between the viruses and bacteria.

The accumulated data show that the introduction of PABA provided an effective agent for a group of diseases for which there was formerly no satisfactory therapy. Many reports attest its value in the treatment of Rocky Mountain spotted fever—a disease that is actually found in 47 of the 48 states.[33] For example, Flinn and his associates[34] obtained very favorable response in nine out of ten cases of spotted fever. In reporting on six patients treated with para-aminobenzoic acid, Ravenel[35] commented on the amazing speed with which the fever dropped, rash faded and recovery ensued in five of the cases as soon as adequate food concentrations of the drug were attained. In the sixth case, too little of the drug was given to effect the course of the disease. In a later report, Ross and his coworkers[36] stated that PABA was used in 17 cases of Rocky Mountain spotted fever with recovery of all patients.

The drug has likewise proved its worth in the treatment of the several forms of typhus. Tierney,[37] for instance, showed that PABA is of value in the treatment of Tsutsugamushi disease or scrub typhus.

Smith[38] similarly observed that the drug was of benefit in endemic (murine) typhus. The number of days of fever in PABA-treated patients being significantly lower than those not receiving the material. In reporting on the employment of para-aminobenzoic acid in the treatment of several series of epidemic, louse-borne typhus, Snyder and his associates[39] stressed that treatment with PABA is more effective if it is begun during the first week of illness. Chung and his colleagues[40] stated that not only did all their typhus patients recover on PABA therapy, but that the disease was also rendered mild with a smoother and shorter period of convalescence.

In 1949, the Hootens and Mitchell[41] stated that, in their opinion, para-aminobenzoic acid was the drug of choice in the treatment of Rocky Mountain spotted fever. Since then the therapeutic picture for the rickettsial diseases has been modified by the availability of newer antibiotics. Thus, during the same year, Harrell, Meads and Stevens[42] reported that aureomycin offered several advantages over PABA for the treatment of Rocky Mountain spotted fever. They suggested that a combination of the antibiotic and the vitamin might prove even more effective than either drug alone. Blattner[32] noted that in addition to its value in spotted fever aureomycin is also useful in murine typhus. At the same time, he pointed out that chloramphenicol (Chloromycetin) achieves striking results against epidemic, murine, and scrub typhus, and Rocky Mountain spotted fever. Terramycin has also been used in these diseases.[43] Indeed, all three antibiotics—aureomycin, chloramphenicol and terramycin—are given first or equal choice by Keefer[44] for the treatment of rickettsial diseases. Nonetheless, PABA remains a valuable adjunct in the treatment of these infections.[32,45]

When administered to typhus patients, para-aminobenzoic acid has a tendency to depress the leucocyte count. It is therefore advisable to make white blood cell counts daily when an individual is under this therapy.[32]

From this leucopenic effect plus a consideration of the mechanism by which PABA produces its effect in rickettsial diseases, it was thought that the drug might be useful in the treatment of certain forms of leukemia.[5,46] In a clinical test of this hypothesis, patients with leukemia were treated with large doses of the drug. It was found that the compound could lower the leucocyte count in chronic myelogenous leukemia. However, this effect could be maintained only through the continued administration of large amounts of PABA. In addition, the all-over clinical improvement was slight and temporary. For these reasons, said Zarafonitis,[7] it was concluded that PABA therapy is not to be considered a practical adjunct in the treatment of leukemia.

However, the report by Ricci[48] indicates that PABA may have a more useful role in the treatment of serum sickness. He studied 39 infants and children with serum sickness following the administration of diphtheria

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antitoxin. Thirty-four of these patients were treated with para-aminobenzoic acid, given orally or intramuscularly. In these cases, the clinical symptoms abated immediately after treatment was started and showed no tendency to return after four days of sustained therapy. In the five untreated cases, the symptoms of serum sickness were severer and of longer duration.

Employing techniques worked out by the investigators on rickettsial diseases, Cotton and Swope[49] made experiments to determine the effect of PABA on boucellosis in guinea pigs. Subcutaneous injections of a 5 per cent solution of the sodium salt exerted a marked bactericidal action on the animals inoculated with a virulent bovine strain of *Brucella abortus*.

Other organisms may also be influenced by PABA. Thus, administration of the drug to guinea pigs resulted in a decrease of the bacterial population of the intestine and in the complete disappearance of the Gram-negative lactose-fermenting bacilli.[50] In his preliminary clinical report, Dwork[51] stated that sodium para-aminobenzoic acid gave promise of favorably altering the course of amebiasis. In some of his patients, there was laboratory and clinical evidence that the disease was arrested following therapy with this drug. Last year, Willis[52] reported that a case of benign paroxysmal peritonitis, a recently recognized clinical entity, responded favorably to PABA.

There is laboratory evidence that PABA has an antibacterial action against tuberculosis organisms.[5] Other studies by European workers also indicate that the drug may be useful clinically in the treatment of tuberculosis. Benda and his associates[53] found that it provided several beneficial effects in patients with pulmonary tuberculosis. Not only did PABA exert a bacteriostatic action, but it also produced a pharmacodynamic and a vitaminic effect. These workers also observed that PABA had a delaying effect on the elimination of streptomycin. Further work by these investigators[54] has not only confirmed the antibacterial action of para-aminobenzoic acid on tuberculosis bacilli, but its delaying action on streptomycin blood levels as well. They noted that PABA had a comparable effect on the elimination of penicillin.

Of kindred interest is the report of Lecoq and Solomides.[55] In studies which showed that PABA had a definite antibacterial action against cclibacillus, they also found that this agent increased the bacteriostatic properties of penicillin and streptomycin from two to four times; depending on the experimental conditions.

A beneficial, presumably synergistic, effect on the action of various substances through the conjunct use of PABA has been cited by other workers. For example, in 1942, it was reported[56] that para-aminobenzoic acid can increase the effectiveness of administered estrogens by interfering with their hepatic inactivation. Shortly after, Sieve[57] suggested the possibility of reducing the dosage in hormone, substitution therapy by the simultaneous administration of para-aminobenzoic acid. His data indicated that PABA stimulated the action of

certain hormones. He also reported that this agent had altered such diversified conditions as impaired lactation, amenorrhea, dysmenorrhea, loss of libido, frigidity, female sterility, and abnormal pigmentation.

Newer studies show the benefits resulting from the conjunct use of PABA and salicylates in the treatment of rheumatic fever and arthritis. Dry, Butt and Scheifley[58] showed that salicylate blood levels were increased by the concomitant administration of PABA, and solely by such action PABA might benefit patients with rheumatic fever receiving salicylates. Salassa and his associates[59] confirmed this work and stated that the oral administration of PABA altered the detoxification of salicylate. The drug also lowered the pH of the urine which decreased the renal clearance of free salicylate. Parker[60] also reported that PABA decreased excretion of free salicylate in the urine.

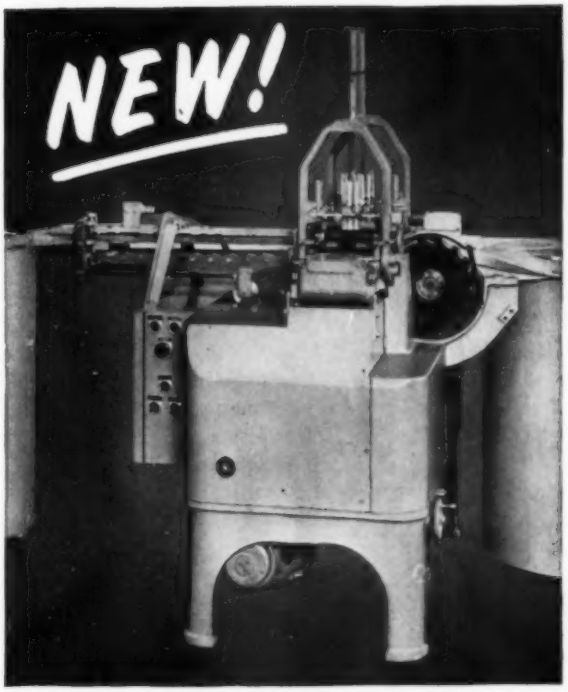
In Canada, Belisle[61] treated three patients who had rheumatic fever with sodium salicylate plus para-aminobenzoic acid. By this combined treatment the initial blood level of salicylate was increased two to five times. A therapeutic concentration of salicylate was thus obtained and, in some instances, with relatively small doses of sodium salicylate. Belisle noted, however, that the clinical employment of PABA may be limited by its obligatory administration every two hours.

Using PABA alone in nine cases of rheumatic fever, Rosenblum and Fraser[62] observed a favorable effect on fever and joint pains. They also noted an improved sense of well being.

Following a review of the literature and a detailed report of one of his own cases, Hoagland[63] pointed out that a high blood level of salicylates is believed to produce optimum results in the treatment of acute rheumatic fever. The blood level of salicylates is increased by the simultaneous administration of PABA. In addition, PABA itself may have a beneficial action on the disease process of rheumatic fever. Therefore, when response to salicylates is unsatisfactory, a patient rheumatic fever should receive PABA in addition. Beneficial effect should be manifested by the disappearance of symptoms and fever.

PABA produces similar benefits with salicylates in the treatment of arthritis. In a study of 125 patients, Smith[64] found that a combination of para-aminobenzoic acid and sodium salicylate was more effective clinically than the salicylate alone. The pain of rheumatoid arthritis and fibrositis was more efficiently relieved by the combined dosage than by the salicylate, but a less pronounced superiority was noted with cervical osteoarthritis and with chronic painful shoulder. The combination also gave longer pain relief than sodium salicylate alone. In addition, toxicity, intolerance or other adverse reactions were not reported by any of the patients during treatment with the salicylate—PABA preparation.

Tuttle[65] employed a preparation containing sodium salicylate and para-aminobenzoic plus ascorbic acid and thiamine for the relief of pain due to nerve irritation



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and muscle spasm in patients with osteoarthritis. In discussing the action of the ingredients of this product she stated that the para-aminobenzoic acid and salicylate "exhibit a true synergism, each enhancing the effect of the other."

Considerable interest has been aroused by the work of Weisel, Barritt and Stumpe.[66] In their efforts to retain the beneficial effects of cortisone on rheumatoid arthritis, while reducing its cost and undesirable side actions, they decided to try para-aminobenzoic acid as a synergist to enhance the action of cortisone. Following treatment of 15 cases with cortisone and sodium para-aminobenzoic acid, they reported that the combination permits satisfactory sub-optimal control of the manifestations of rheumatoid arthritis with an arbitrarily chosen dose of cortisone acetate which, by itself, is completely ineffective in controlling the manifestations of rheumatoid arthritis. The sodium para-aminobenzoic acid in the dosage employed produced no evidence of any beneficial results when administered alone. Moreover, there were none of the undesirable side effects which are fairly common with the usual doses of cortisone. Considering the degree of success obtained in these cases, Weisel and his associates feel that the combination warrants further and more extensive use.

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T. G. A. Meeting

(*Continued from page 749*)

of the cosmetic industry which had repeatedly been commented upon by former Commissioners Campbell and Dunbar, and even the present Commissioner Crawford. All the favorable facts were omitted from the letter and the letter, in order to make its point, took up cases of products running way back into ancient history under the law and even garbled and mis-stated the facts with respect to some of these cases. Appearance before the committee of members of the staff of the Food and Drug Administration presented few facts to support the position that the law should be changed, principally because such facts do not exist. They presented no facts whatever in support of the position that the law should not be changed although the evidence on this point in the files of the Food and Drug Administration is overwhelming. In other words, the Food and Drug Administration appeared as a special pleader for an unnecessary law and presented only one side of the case, and that in very biased fashion.

"Every citizen and every organization of citizens has a perfect right to petition members of Congress for new laws or changes in existing laws. Government officials and Government Bureaus have equal rights with everyone else in that respect. In my opinion, however, the position of government officials and government bureaus in this respect is somewhat different from that of other citizens and other groups. Government officials are employees of the citizens of the United States both those who are in favor of new laws, the repeal of old laws, or changes in existing laws, and those who are opposed to them. It is quite ethical for government officials and employees to voice their own opinions relative to the desirability of changes, but when they appear before Congressional committees, especially fact-finding committees of Congress, it seems to me quite unethical, if not immoral, for them to engage in special pleading by presenting a biased account of facts and by failing to reveal all the facts.

"The tendency of government officials and government bureaus to become special pleaders especially on proposals which are apparently designed to grant them more powers, has unfortunately been growing. I have cited the instance of the Trade Commission with respect to certain proposed amendments to the Robinson-Patman Act and I have cited the activity of the Food and Drug Administration relative to certain possible amendments to the Food, Drug and Cosmetic

Act. I have cited these because they are of direct interest to and effect upon the cosmetic industry and its members.

"Perhaps I should not criticize these officials too severely. Perhaps the criticisms should be directed more properly against the committees themselves, and especially counsel for such committees, who have shown a quite human desire to make capital for themselves out of the conduct of committee hearings. Fact-finding committees of Congress are quite proper, quite necessary and wholly desirable, but it is my sincere hope that in the future, when government officials appear or are called before such committees, they be required to present all the facts, both pro and con, on the subject under consideration.

"To me, this is one of the most serious developments which we have seen in recent years because it affects the liberties of all citizens and groups of citizens. I believe that every one, whether he favors new legislation, the repeal of legislation, or the amendment of legislation should insist that our bureaucrats, when called upon to give testimony, confine themselves completely to facts and that they be compelled to give *all the facts* and not just such facts as may be calculated to cause such changes in our laws as would increase the power of a growing and increasingly dangerous bureaucracy. Only in that way can we see that our liberties are preserved and that our rights of petition remain fully effective."

Hugo Mock, general counsel of the association, rendered a report which he said did not review the past, but rather tried to "indicate future trends" in the industry "with especial reference to the problems of the industry as effected by the various government agencies in Washington."

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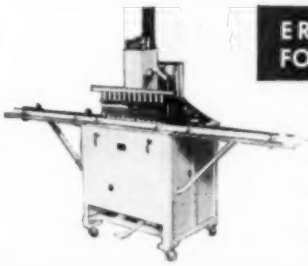

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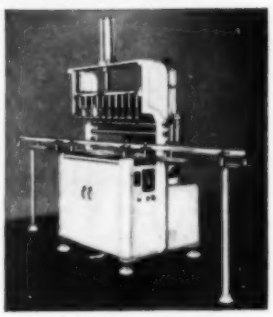

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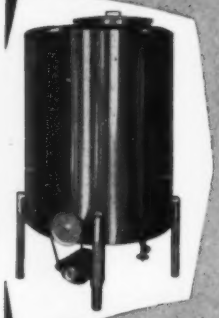

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industry have not properly analyzed their cost of delivery and they are now penalized for that omission.

"Legally, while the Russian imbroglio continues, nothing can be done by your industry to effect the present tax situation. Nevertheless, I want to add my own small voice to that of your competent tax counsel in Washington, that you increasingly continue your efforts to erase from the statute books at a propitious time the cosmetic tax. It is absolutely discriminatory against your industry but will remain as long as you permit the government to keep it, as it is a tax which brings a considerable volume of cash and is easy to collect. Whenever circumstances will permit the repeal of these special taxes, the effect of such repeal will be clearly helpful to your industry, and the fact that the present is not a propitious time to urge such repeal does not cancel the need for constant vigilance in this field. You must keep a constant and vigilant eye on the tax situation even if no early relief is possible.

"The industry is now in the throes of the enforcement of the cosmetic code. At this time and place, I repeat what I have frequently said in the past. The Federal Trade Commission did not write or participate in any way in the writing of the anti-trust acts or as far as I know in the Robinson-Patman legislation. The Commission is strictly an administrative agency trying to carry out its mandate from the government. In my opinion, the industry is fortunate in having Messrs. Mead, Mason, Carson and Spingarn as members of the Commission, a personnel who are liberal and business minded and in no sense afflicted with what is collectively and often imperfectly known as the spirit of bureaucracy. The cosmetic code has been written in an honest attempt to ameliorate the straight jacket restrictions of the Robinson-Patman statute, although in my opinion the best way to deal with the Robinson-Patman law would be to repeal it and to substitute therefor a law which is enforceable and fair to all manufacturers and distributors alike.

"The intrinsic absurdity of the law can be easily illustrated with a simple, small example. The text of the law says:

"Nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered.

"Coming down to the retail level, if a woman bought a pair of shoes after trying on one pair, she would be entitled to a far different price than the woman who bought the same pair of shoes after trying on fifteen pairs; and to whom shall the expense be charged if the shopper tries on a dozen pairs and buys none? In your own industry, how can you statistically apportion selling costs when selling is a year-round job and the cost of visiting your customers and getting orders can never be accurately ascertained. It is impossible to make one sale exactly commensurable with every other sale.

"In general our thinking of the Food and Drug

Administration is that here is another one of those government departments which is helpful and instructive at times, annoying at others, but deserving of no special comment. I am afraid that we are apt to think of the Food and Drug Administration as just another agency under government control as we might think of the Post Office or Water Supply Department, without attributing to it any special characteristics. It may be well worthwhile to analyze this background a little further and to probe a little deeper into the facts.

"You are all aware of consumers' unions which are organized from time to time to represent the consumer and it was only last summer that Senator Gillette of Iowa proposed the organization of a special Congressional Committee to represent consumer interests.

"Unlike the Internal Revenue Bureau or the Federal Trade Commission or any other government agencies, the Food and Drug Administration has no advance objectives except to protect the public health and interests and in many of its activities it has acted strikingly as an impartial arbiter between industries.

"A few examples will make this distinction clear.

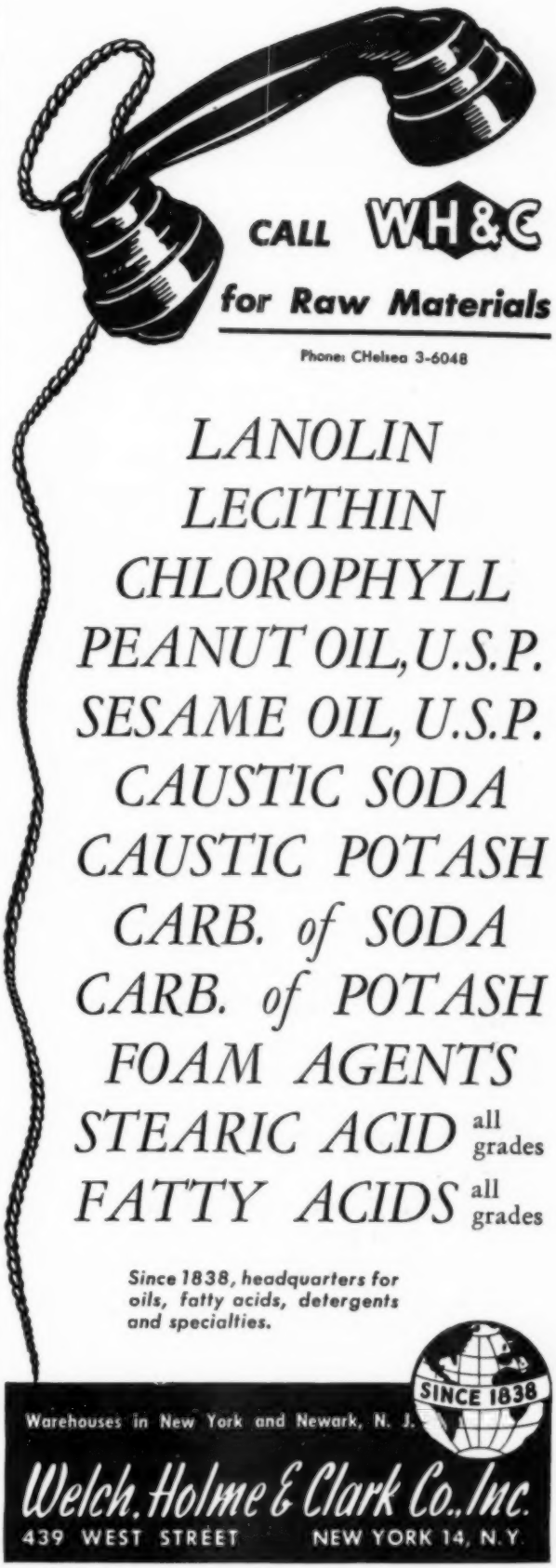
"You are for instance aware of the long discussions in Congress of the Durham-Humphrey bill regulating prescription drugs and indicating with finality what drugs may be sold over the counter and which drugs may be sold only on a physician's prescription. Here is a contest between two opposing industries, each competing for more authority, the physicians to enlarge the scope of their power, and a branch of the drug field attempting to avoid as much as possible the restriction on sales of their products over the counter.

"This is one of the instances where the Food and Drug Administration as impartial arbiter between the industries is invaluable.

"We come to some examples where your own interests are intimately involved.

"In many of its aspects the medical profession is the noblest example of our civilization, but there is a material side to the practice of medicine exemplified by the American Medical Association with its multiform activities. It must be remembered also that every craft and profession is jealous of its prerogatives. Bar Associations scrutinize very jealously the activities of notaries and accountants; barbers want all barbers licensed; and there is an unceasing struggle between those licensed to practice medicine and outside healers represented by chiropractors, osteopaths, bone-setters, Christian Scientists, and others. In your own industry, the disputed territory is the joint field of the dermatologist and the cosmetician.

"You will recall the blast of Dr. Fishbein of the American Medical Association many years ago which in one day practically destroyed the good will of one of the first hormone preparations offered for public sale and nearly every department store in the country stocking the preparation threw it out immediately upon the appearance of Dr. Fishbein's article. There was a multi-million dollar suit against Dr. Fishbein and the American Medical Association which was



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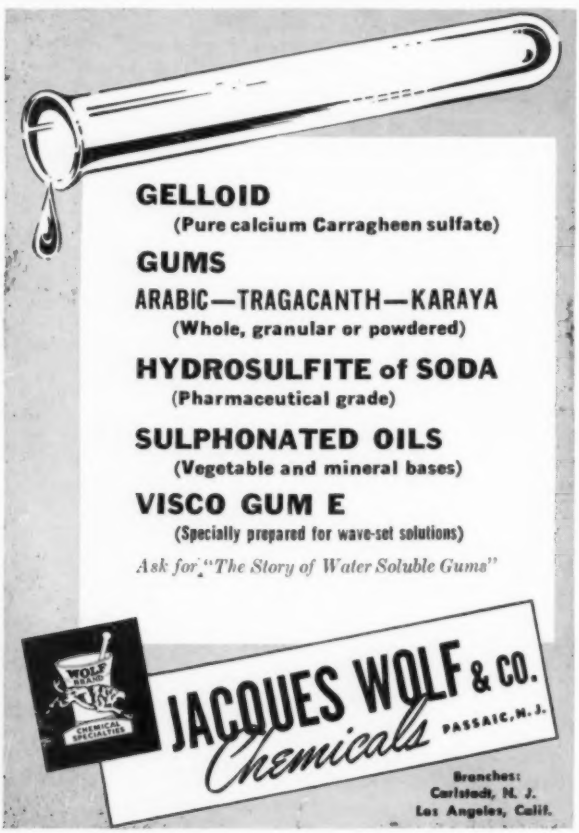

settled, but it took many years of careful promotion to revive the good-will which was destroyed over night.

"Of particular interest is the fact that ever since that time we have had many eminent dermatologists still advocating that hormone preparations for the complexion should be sold only on prescription. This despite the fact that the Food and Drug Administration after a careful screening of the facts found these hormone preparations offered for department store sale harmless. Similarly, the medical profession would much prefer all skin ailments, whether acne, athletes' foot, or any other conditions of the skin to be treated only by physicians, which, theoretically, might be an ideal solution, but which would be utterly impractical.

"It is because of the development of these situations that the toilet goods industry has cause to be grateful to the Food & Drug Administration for acting as impartial arbiter between industries and preserving at all times an attitude of impartial objectivity toward all industries. I am glad to quote another source, a noted drug executive, Dr. Klumpp, in stating that "there is a solid integrity that runs through the entire organization of the Food and Drug Administration."

"Having testified fully and gladly to the integrity and to the ability of the Food and Drug Administration, I want to go on record as dissenting from one part of the present Food and Drug Administration program.

"Dr. Crawford has proposed as a part of the legislative program of the Food and Drug Administration that new cosmetic permits be required similar to new drug permits now required, in every case where a new cosmetic ingredient is used. I think it can be demonstrated that this is an unnecessary and excessive precaution which would be especially burdensome to the small manufacturer in this industry. I do not deny the wisdom of the proposed legislation as to food and drug ingredients because it is impossible to prophesy what effects may be produced in the human metabolism where new ingredients for foods and drugs are used.

"However, the statutory definition of a cosmetic itself contradicts the necessity of this legislation regarding new ingredients because cosmetics are defined as:

"(1) articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance, and (2) articles intended for use as a component of any such articles; except that such term shall not include soap.

"It will be apparent from this definition that it is restricted to things applied superficially to the skin and not articles having any systemic effect, and the Food and Drug Administration is already authorized to consider any cosmetic adulterated if, according to Sec. 601 under the present Act.

"(a) It bears or contains any poisonous or deleterious substance which may render it injurious to users under the conditions of use prescribed in the labeling

thereof, or under such conditions of use as are customary or usual . . .

"It is apparent that the cosmetic manufacturer is already an insurer of the safety of the ingredients used by this very provision."

In reporting in his position as scientific director of the association, Harold D. Goulden dwelt on the importance of a properly staffed scientific and research department, and on making proper use of this department. He said in part:

"There is keen competition among the industry for the consumer's cosmetic dollars. Companies which report continued sales increases quite obviously excel in one or more techniques. A new product succeeds where another fails because it is a better product, better advertised, better packaged, better sold or better made. Your laboratories exist so you can make a better product, can develop the foundation for new advertising claims and create increased sales.

"If you, as the top executive, are to keep your company in the forefront of an advancing industry you must be certain that your scientific staff is being fully and efficiently utilized. First you must have a capable technical director and give him the staff and the tools to do the job. He should be in on all policy-making conferences, otherwise he cannot suggest ways in which the laboratories can assist in the particular problem. Don't call him in only when you think his special knowledge may help, for by so doing you deprive yourself of many points of view which his technically trained mind would explore.

"There are those who do not enthusiastically undertake research. They show considerable reluctance to adopt research projects. I am not particularly unhappy about this situation for there is much to be said for their point of view. Research, a sort of glorified variety, undertaken with the idea that the machinery of research is the answer to all problems, is indeed expensive and rarely usefully productive. Research programs should be initiated only after very careful deliberation and planning. I am certain that research would be more wholeheartedly undertaken and that there would be a much more useful expenditure of money if the basic principles of research were better understood.

"Research should be thought of as a tool, and like a tool it should be used when there is need for it, according to a well-thought-out plan and with as little an expenditure of money as is possible. In the practical type of research, which is the type we are considering, one does not get the answers unless the question to be answered has been well-defined and a plan carefully and thoughtfully developed for arriving at the answer. Anyone who initiates a research project without first having established the question to be answered, and worked out an economical plan of attack is not only likely to run into serious expenditure but he is quite likely to be unsuccessful. The point I wish to leave with you in management is that research is not a complex, unduly expensive, ritualistic procedure, but just

(*Continued on page 837*)

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Industry's Books

(*Continued from page 801*)

Outline of Fundamental Pharmacology, (The Mechanics of the Interaction of Chemicals and Living Things), by David Fielding Marsh, Professor and Head of the Department of Pharmacology, West Virginia University School of Medicine, 219 pp., Cloth, Charles C. Thomas, Publisher, Springfield.

This book has been designed for the student of chemistry, pharmacy, or medicine, or for the research worker in any of these fields, in order to explain the aims and purpose of the pharmacologist. This book should be of general interest to all individuals that have any contact with any chemical substances that are use or may be used as drugs or medicinals. This outline lays the foundation for a standardization of thought, for the elimination of obvious errors, so that the mass of useful data about the action of chemicals or drugs on living things that is being steadily compiled by the biologist, the agriculturist, the clinician, the physiologist, the biochemist, and the pharmacologist may be such that reasonable comparison of findings may be made. Although various groups may feel that some particular type of problem should only be carried out by their qualified personnel, this text points out the logical position of their findings in the entire picture, and emphasizes the essential usefulness of all data about biological investigations of drug or chemical activity.

Ultraviolet Spectra of Aromatic Compounds, by Robert A. Friedel, D.Sc., Physical Chemist, and Milton Orchin, Ph.D., Organic Chemist, Bureau of Mines, Spiral Binding, John Wiley & Sons, Inc., New York, $10.

The ultraviolet absorption spectra of organic compounds are of considerable importance in qualitative and quantitative organic chemistry and are increasingly valuable in the determination of the geometry of molecular structure. Although their utility is universally recognized, few collections of spectra have appeared. The interest of this work is confined to polynuclear aromatic compounds. The present catalogue of about 600 spectra is a start in the systematic collection of the ultraviolet spectra of this class of compounds. About half of these spectra have been taken from the literature and have been transformed, where necessary, into a consistent method of plotting. Spectra determined in the laboratory of the authors constitute the other half of the compilation; many of these are being published for the first time.

The Essential Oils, by Ernest Guenther, Ph.D., Vice President and Technical Director, Fritzsche Brothers, Inc., New York, 507 pp., Illus., D. Van Nostrand Company, Inc., New York (1952) $9.75.

The present work, like the two previous volumes of this series, describes the production, physicochemical properties, chemical composition, and uses of individual essential oils. For the reason noted in the Prefaces to Volumes III and IV, these oils are grouped within the botanical families to which the corresponding plants belong, but the families themselves are not arranged according to any taxonomic system. Some of the oils treated in this volume are of great importance to the flavor chemist; nutmeg, cardamom, ginger, pepper, cubeb, star anise—to mention only a few. Others will be of interest to perfume, cosmetic, and soap perfumers: among these are rose, sandalwood, cananga, ylang ylang, jasmine, tuberose, and violet. Originally it was hoped that the fifth volume would complete the treatment of individual essential oils. In the course of preparation, however, the book grew to such size that division into two parts became necessary. The present volume, therefore, will be followed by a sixth—the last of the series.

Medicinal Chemistry, by Alfred Burger, Associate Professor of Chemistry, University of Virginia, Vol. II, 1084 pp., Cloth, Interscience Publishers, Inc., New York $10.

This is an advanced treatise of the chemistry, biochemistry, and therapeutic and pharmacological action of natural and synthetic drugs. The second volume of this treatise on medicinal chemistry contains a chapter on the chemistry of hormones and their uses in medicine, but its major part is devoted to drugs used in the chemotherapy of diseases caused by pathogenic organisms. Contents to Volume II—The Hormones. Essential Amino Acids and Fatty Acids. Chemotherapy. Theories of Metabolite Antagonism. Dyestuffs in Chemotherapy. The Sulfonamide Drugs. Antimalarials. Chemotherapy of Acid-Fast Infections. Metal-Free Drugs Used in Tropical Diseases. Antibiotics. Antifungal Agents. Anthelmintics. Organometallic Chemotherapeutic Compounds of Arsenic. Antimony, and Bismuth. Sterilization and Disinfection. Antiseptics. The book also contains a cumulative index to Volumes I and II.

A Study of Antimetabolites, by D. W. Woolley, Member, The Rockefeller Institute for Medical Research, 269 pp., John Wiley & Sons, Inc., $5.

Dr. Woolley here investigates substances which specifically produce deficiency diseases in living organisms. These substances he has called antimetabolites and has discerned some of the underlying principles which govern their action on animals, bacteria and other forms of life. He has put forward a view of the mechanism of action of these substances which enables the reader readily to understand how they function. He has also described how antimetabolites occur normally in living things, and seem to play a part in the regulation of normal vital processes. Several of these substances, for example the sulfonamide drugs, have proved very useful in the treatment of diseases. The author discusses how it may be possible to treat other more recalcitrant diseases by making use of the knowledge presented in this book. He has also shown how these antimetabolites are being used as tools to discover the nature of chemical reactions associated with living processes.

The Physical Chemistry of Surface Films, by William D. Harkins, Andrew MacLeish Distinguished Service Professor Emeritus University of Chicago, 413 pp., Reinhold Publishing Corp., New York, Cloth, $10.

This important book covers all the fundamental pioneer work of the late W. D. Harkins on the mechanism of liquid/liquid films and interfaces, surface tension, emulsification, energetics of surfaces, the nature of films on liquid and solid subphases, and properties of solutions of long-chain electrolytes. Also included is an introductory study of the electric layer writen by E. M. Verwey. Though some of the material has appeared in earlier publications, this volume serves as an invaluable guide to the many advances in emulsion technology—including emulsion polymerization—on which the author was working at the time of his death and much of which has not previously been published. All chemists, physicists, biologists—indeed, any scientist, whose work involves an understanding of detergency, films, foams, or any type of heterogenous system — will find this basic treatise of immense value.

(*Continued from page 835*)

an ordinary tool and as such it must be designed for the job expected of it, namely to solve problems, and that the greatest effort is often expended in stating the problem to be solved, and developing the most economical plan that can produce the solution.

"I sincerely hope that what I have just said does not give you the impression that I do not believe in research. Nothing could be farther from the fact, for I have continuously encouraged you to extend your research programs. It is my premise that there is not a cosmetic manufacturer who does not have questions to ask. If, by chance, there should be any such, I'm afraid that he is not very observant and is in a false state of contentment from which he is likely to be rudely awakened.

"The value of a research department in finding the answers to sales problems as well as production problems and the development of new products is, I believe, well-known to and accepted by this industry. It is quite generally agreed that the selection of the proper man to be research director is of the utmost importance since the success of the research department depends primarily on him. It is quite often said that it is difficult for management to fully appreciate the value of the research department. It has also been intimated that this may be largely due to the fact that top management personnel usually arrive there via the sales end of the business. Whatever the reason may be, it is my contention that top management of a cosmetic company should include a technical man for the proper guidance of management. He should be on a par with the sales manager and the production manager and should possess the ability and the authority to cooperate with sales and production. In the event that such arrangement is not feasible, then the technical man or research director should report directly to management,—at the top level. This is advocated on the basis that to do otherwise is to invite unintentional misrepresentation or dilution of the facts by transmission through lower echelons.

"If, you, the executive, will engage in frequent and comprehensive discussions with your technical director you will find that they will:

"1. Define and clarify the problems you want him to solve.

"2. Make you familiar with potentialities and limitations of scientific investigation.

"3. Result in a method of attack that will solve problems faster than either executive or scientists alone could do."

The Alcohol Story

(*Continued from page 745*)

It stands to reason that when molasses becomes cheap enough, the fermenters will always be eager to buy it up and sell the alcohol. The increasing importance of petroleum in the alcohol field, however, has undoubtedly begun to cast its steadying influence on molasses. Both the fermenters and the Cuban Sugar Institute must realize by now that they will have to meet the synthetic

KOMMON/ SCENTS!

Vacation season is on us again. The nation will now pro rate two weeks each to its citizens for the sole purpose of offsetting the frustrations of the other 50.

•

The biggest trouble with a two weeks' vacation is the three weeks of packing for it. Then, of course, there are always the wasted evenings attendant to writing to new vacation-time friends. The waste isn't in the writing of course, just the worrying that you don't write.

•

Most attractive vacations seem to be the "package" deals offered by the travel agencies. One outfit is currently offering so much for so little, they'll be able to top themselves only one way next season: Offer the customer a plane trip, taxis to and from the airport, six days at Miami Beach and Havana hotels—and seven dollars for the privilege of handling his business.

•

Ever since the FDR-Cordell Hull "Good Neighbor Policy," Latin-America is getting a bigger American tourist play than Florida. The reasons are obvious: Tropical nights, exotic customs, strange music, foreign languages—besides, the Kefauver Committee never got there to louse up the gambling situation.

•

This year's vacationists will have less money to spend. This is due to higher taxes, higher cost of living and less cash after paying exorbitant prices for reservations at places to spend their money.

•

One sun loving outdoor type feller we know spent so much for reservations at a Catskill Mts. hotel, when he got there he didn't have enough left to play Gin Rummy for more than 10 consecutive days and nights.

•

Most members of the Cosmetic Industry agree there's nothing like a good vacation. Especially as a way to rest up from a year's layoff!

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alcohol price, when that commodity is plentiful, or be forced out of the alcohol market. The next five or ten years will tell how compatible these two sources will become.

Propietary Association Meeting

(*Continued from page 755*)

analysis of data, rigid control of the experiments by objective methods, the necessity for elimination of personal bias in the investigator, the elimination of therapeutic suggestion as a factor in differentiating true efficacy from that resulting from influence of the investigator on the psychosomatic behavior of the patient, we find a natural field of activity for the ignorant, the incompetent and those intent on fraud.

"This all adds up to the fact that you have been in the past attempting to solve some of the most difficult problems which confront the biological scientist and the physician and doing it without the counsel of those most qualified to undertake the task.

"Why have you been unable to attract the best scientists to aid you in solving your problems? A few hold back because they prefer to remain in academic seclusion, some disagree with the basic philosophy of self-medication, some dislike the scientific company of those who have counseled you in the past, some have remained aloof and unapproachable in the knowledge that a few of their scientifically unassailable colleagues have surrepticiously bootlegged, at exorbitant prices, unreliable information and opinions brewed to fit the requirements of the situation. But back of all these is a more impotant reason since it strikes at the pride and intelligence of the scientist you seek to interest. The real reason is that the calibre of your technical effort has not been acceptable at scientific par.

"What has been the result? In large measure, your group has been forced to rely on the statements of those who not only lacked the competence to produce controlled and reliable scientific evidence and interpret it correctly, but now in these changing times also lack the sagacity to recognize that the market for uncontrolled and uneliable data and immature and untrustworthy opinion is rapidly diminishing, except for those few who do not intend to remain long in the business. In common parlance, my friends, you have been gypped . . .

"Research has been badly oversold, some have even gained the impression that research will, by some magical touch, render a compound less toxic or more efficacious in a quantitative manner.

"You can waste both time and funds in so-called research of improper design and that no amount of research will uncover merit in a worthless product. It should be one of the principal functions of the competent investigator and research advisor to correctly evaluate, a priority, whether the anticipated results, be they positive or negative, will justify the expenditure of time and funds . . .

"From a pharmacological point of view, the long-range prospects in the field of chemical agents in the

treatment of disease has fascinating possibilities. Many of these compounds will be suitable for use in home medication. Who can predict which way the trail may lead? We need a new and safe sedative and hypnotic to replace the barbiturates; we need a non-addicting analgetic which is more potent than aspirin; we need a safe and effective vascular dilator, and a wide variety of specific smooth muscle relaxers; we need means of effectively controlling the distribution and removal of ions from the body to say nothing of a variety of anti's, to mention only a few.

The public has come to expect that purveyors of drugs will come up periodically with new agents for relief of their maladies. Only in recent years has the proprietary industry recognized this fact and taken adequate cognizance of changing times.

I believe that the time is now ripe for the proprietary industry to claim its own, to raise itself by its own boot straps, so to speak, to set up as its motto "Home medication with safe and efficacious drugs."

Such a program may require junking of worthless and time-honored formulae in favor of newer and more effective agents; it may require the re-evaluation of old compounds which have been erroneously discarded because at the time they appeared to be less efficacious and more toxic than the new substances; it may require the large expenditure of monies for research; it probably will require that the industry as a whole put something back in the pot, such, for example, as support for the training of graduate students with no expectation of gain except to the industry as a whole, thus accepting a pattern already established by the heavy chemical industry. It will mean re-evaluation of the long-range effects on the public of a merciless campaign of unpleasant and misleading auditory and visual propaganda. It will probably mean doing all those things which are necessary to bring the proprietary industry in its technical aspects up to scientific par.

If one had the time to read all the Stipulations and Cease and Desist Orders issued by the Federal Trade Commission with respect to advertising of medicinal preparations, he would find that frequently they are inconsistent, executive vice-president Frederick J. Cullen told the meeting, adding:

"Most of the difficulty a drug manufacturer meets with the Commission arises from the opinions issued by its medical department which seem to be based on the interpretation of words, rather than upon scientific facts and evidence."

Regarding drug manufacturers and their responsibility, Dr. Cullen said:

"At the annual meeting of the American Drug Manufacturers Association, held recently at Hot Springs, Robert Lincoln McNeil placed drug manufacturers in four groups:

"First—those who enter the drug manufacturing field without knowing what it is all about.

"Second—those who know what it is all about, but who just don't care.

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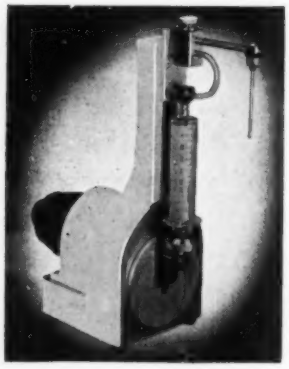

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"Fourth—Those who know what it is all about, and are willing and ready to work for the best interests of the consuming public and the drug industry.

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"Now let's look at the other groups. The individual who enters the field and knows little of what it is all about will very soon learn—or else.

"The second category is made up of those who occasionally enter the drug field and refuse to accept their responsibility to the consumer, but merely desire to get all they can from the business, as fast as possible. This causes many headaches to others while such activities are going on, but we know that these manufacturers and their products must soon disappear from the picture.

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Importance of Hospital Exhibits

(*Continued from page 757*)

6. They offer a wonderful opportunity to supply a quantity of your product for immediate clinical trial in the hospital. The actual delivery of these products may prove to be the door-opener at the hospital that your salesman has been waiting for.

7. They offer the additional advantage of giving your salesman a chance to become better acquainted with the hospital superintendent, the hospital pharmacist and his associates, the purchasing agent, supervisor of nurses, and other medical and non-medical personnel. Supervisors of nurses, you will find, are deeply interested in hospital exhibits, especially those that have an educational value in the training of student nurses. Your salesman can stress, for example, the advantages of your product over competitors insofar as administration is concerned. What nurse isn't interested in learning how to administer medications easily and more effectively?

The actual mechanics of organizing and staging a hospital exhibit are, of course, determined by your individual budget for this form of sales promotion and by what end you hope to accomplish. At Schenley we have developed a portable hospital display unit—a sturdily constructed wood and masonite unit that the salesman can carry in the trunk of his car and assemble in a few minutes. With it he carries a stock of the products he intends to display, samples, and appropriate literature. Most important, he carries with him the knowledge of what we expect him to accomplish by the time he dismantles the exhibit.

Out of years of experience with hospital exhibits, we have been able to give our salesmen a brief outline of what he must do to assure the success of his exhibit. We ask him to bear in mind these simple do's and don'ts:

Set up your display early and do it as attractively as possible with the material you have available.

Do not try to exhibit the firm's entire line of products.

Stand by courteously and receptively; do not move about, intrude upon conversations between MD's, or buttonhole doctors—even familiar ones.

Try to be informed regarding specialties and interests of staff members.

If your product lends itself to demonstration, make and appeal to the senses of exhibit visitors. Let them see the product, hear about it, touch it, smell it, and if possible taste it.

However, do not force samples or literature on doctors.

Make the most of opportunities for making appointments for office calls, further discussion, and delivery of samples.

As a technique for producing increased sales, the hospital exhibit has not yet been fully explored. But our experience with this medium indicates that it has a most promising future. And those manufacturers who explore it further will be amply rewarded for their efforts.

Patent Thoughts and Trends

(*Continued from page 815*)

2,589,210—**Parke, Davis—Therapeutic Compositions Comprising Fibrinogen and Water soluble alkali and alkaline Earth Metal Salts of Penicillin.**

2,589,211—**Parke, David—Aminophenyl Sulfonyl Phenylaminoalkanoic Acids.**

2,589,223—**G. D. Searle & Co.—Hydroxy-Tetrahydro-Naphthoyl-Alkanoic Acids.**

2,589,224—**G. D. Searle & Co.—Basic Esters of Substituted Benzoylaliphatic Acids.**

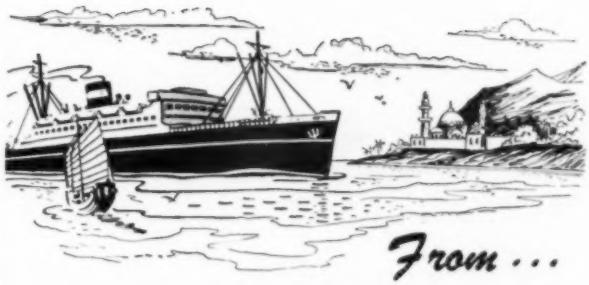
2,589,305—**Upjohn — Dehydration of Steroid Side-Chain Secondary Alcohols.**

2,589,510—**E. Ratner & A. Pastore—Hair Curler.**

2,589,832—**D. D. Loewenstein—Hair Curler.**

2,589,934—**Abbott Labs.—2-Aminomethyl-Tetrahydro-Acenapthones-1.**

2,590,067—**Hoffmann-La Roche—Methanol Complex of Dihydro-L-Ascorbic Acid.**



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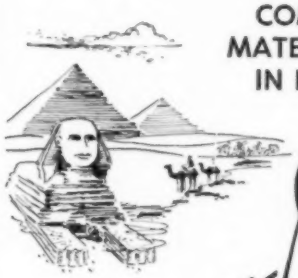

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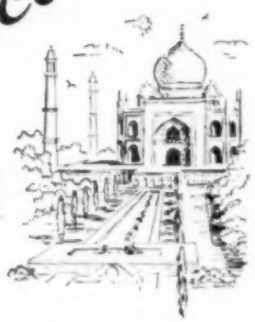

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2,590,075—Ciba Pharmaceutical—Quinoxalines.
2,590,079—Wyeth—Tertiary Butylamines.
2,590,085,6—G. D. Searle—Hydroxy Alkanoic Acids & Salts.
2,590,105—Givaudan—Production of Fatty Alcohols.
2,590,125—G. D. Searle—10-(Quaternary-Ammonium Alkyl) Phenothiazine Salts.
2,590,126—G. D. Searle—Quaternary Ammonium Salts of 2,6-Lupetidine.
2,590,139,40,41—Merck—Preparation of Crystalline Streptomycin Hydrochloride, Dihydro S. Sesquisulfate and Dihydro S. Sulfate.
2,590,403—Novo Terapeutisk Lab. (Denmark)—Preparation of Ammonium Penicillin.
2,590,636—Ciba Pharmaceutical — Ketohalogen Dimethyl-Perhydro-Phenanthrenes.
2,590,637—Ciba Pharmaceutical—Direct Halogenation of Steroids with an Unsaturated Side chain in 17-Position and the Dihydro-halogenation of Resultant Products.
2,590,638—Ciba Pharmaceutical — 2-Cyclohexyl and 2 - Cyclohexylidene - 1 - (3′ - Piperidino - Propyl)-Cyclohexanols.
2,590,669—A. Zachary—Hair Curler.
2,590,841—Hoffmann-La Roche—Pyridoxin.
2,591,110—Eastman Kodak—Treatment of Isomeric Ester Mixtures in Vitamin A. Synthesis.
2,591,679—G. D. Searle & Co.—Aminoalkanoyl Phenothiazine Derivatives.
2,591,742—C. C. H. Thomas et al—Enteric Medicament Sodium carboxymethyl cellulose coating with film of cellulosic acid.
2,591,811—Glaxo Labs. (England)—Unsaturated Carbinol Related to Vitamin A.
2,592,105—Sterling Drug — Iodinated Aminophenyl-Sulfonylamino Carboxylic Acids.
2,592,149—J. Jacobson—Therapeutic Preparation of Vitamin A and Benzyl Cinnamate.
2,592,191—Sterling Drug—Quaternary Ammonium Salts of N-(3,3-Diphenyl-propyl) Pyrrolidine.
2,592,529—Wm. S. Merrell Co.—2-Amino-7-Heterocyclic amino-Thioxanthenes.
2,592,930—Takeda Yakuhin Kodyo Kabushikigaisha—Preparation of Vitamin B_1.
2,593,248,9—Am. Cyanamid Co. — Androstapolyenes.
2,593,434—E. A. H. Friedheim—Propylene Glycol Solution of Arsenic Medicaments.
2,593,737—Minnesota Mining & Mfg.—Perfluorinated Cyclohexyl Carboxylic Acids.
2,593,798—G. D. Searle & Co.—Aminoalkylamino Isoquinolines.
2,593,852—Bristol Labs.—Penicillin Amides.
2,593,860—Hoffmann-La Roche—Preparation of Alpha-Amino-Alpha, Alpha-Diphenylacetic Acid.
2,593,929—S. Solop—Hair Curler.
2,594,245—Merck—Preparation of Crystalline Dihydro Streptomycin Hydrochloride.

2,594,265—Burroughs Wellcome—2,7-Diamino-9-(Aminophenyl) Phenanthridinium Salts.
2,594,296—Aerosol Corp. of America—Lobeline Aerosol Dilating Medicament.
2,594,309—Burroughs Wellcome—2,4-Diamino-5-phenyl-6-Alkylpyrimidines-Antimalarials.
2,594,323 — Upjohn — 24-Substituted Delta 5-Cholene-3,24-Diols.
2,594,349—Schering Corp.—Estrone Manufacture.
2,594,355—Schering Corp.—Production of Hydroxylated Aliphatic Carboxylic Acids and Lactones.
2,594,374 — U.S.A. — Streptomycin — Polymyxin —Buritracin Composition.
2,594,418,9 — Geschickter Fund — Salicylates of Quinoline Derivatives.
2,595,159 — Upjohn — Vitamin B_{12} Concentrates from Streptomyces Griseus Cultures.
2,595,200—Ciba—Beta - Naphthyl - (2) - Beta - Alkyl-Alpha, Alpha-Dialkylpropionic Acids.
2,595,304—G. D. Searle & Co.—Trihalomethyl Derivatives of 1,3-Dioxane.
2,595,327—Am. Cyanamid—Prepn. of △ 5,7-Pregnadienes.
2,595,362—R. M. Keele—Hair Curler.
2,595,405—Merck—Benzhydryl Ethers of Tropines.
2,595,499—Merck—Production of Vitamin B_{12}.
2,595,635—C. H. Braselton—Cosmetic Applicator.
2,595,645—W. H. H. Davis & F. V. Schleimer—Hair Curling Device.
2,595,723—Hoffmann-La Roche—m - Allyl - Oxy - Phenyl-Isothiocyanate.
2,595,735—Schieffelin & Co.—Basic Esters of 2,3,-Di(4-Alkoxy-Phenyl)-2-Hydroxypropanoic Acid.

Court Cases

2,577,710—E. G. McDonough, Premanent Waving Compn. and method, filed March 29, 1952, Dallas, Texas, D.C.; Sales Affiliates, Inc. v. Skillern & Sons, Inc., et al.; Sales Affiliates, Inc. et al. v. Southwestern Beauty Products Co.

Copies of U.S. patents may be obtained for 25c each by writing to the Commissioner of Patents, Washington, 25, D.C.

Peppermint Oil Production in Oregon

(Continued from page 753)

1936. Then production remained fairly constant until 1942, when the country's annual production rose to 1,435,000 pounds. Reduced acreage and low yields cut the 1943 production to nearly one-half that of the previous year. During the next 4 years, however, U. S. production of mint oil soared upward, reaching a record breaking total of 1,603,000 pounds in 1947, from 47,400 acres of land. In comparison with 1929, when 968,000 pounds of mint oil were produced from 55,530 acres of land, the year 1947 showed an increase of 65.6 per cent in total production, and a decrease of 14.7 per cent in total acreage"[7].

This fact is significant inasmuch as more oil was

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produced from a smaller acreage.

"Most of the country's increase in peppermint oil production since 1941 is accounted for by the expansion in Washington and Oregon. Since 1947 the annual production of mint oil has been increasing steadily in these two states. The U. S. Department of Agriculture figures for Washington and Oregon show an increase from 112,000 pounds of oil in 1939 to 831,000 in 1948—over half of the total pounds of mint oil produced in the United States in the latter year"[7].

"Most of the labor needed for the growing of peppermint comes in the spring during planting time, and in the fall during harvesting operations. Except for these peaks of labor, one man can easily care for 20 to 30 acres of peppermint. Mint summer cultivation requirements and fall harvesting operations usually don't coincide with other field crop labor requirements"[8].

However, since the established mint grower of the Willamette area farms from 60 to 120 acres of mint, the labor problem is of some concern, especially that of hand hoeing to control weeds.

The cost of growing, harvesting and distilling peppermint fluctuates with the price of the planting stock, wage scales, and other local conditions. The costs vary greatly among farms, but labor is the greatest single factor. Cost of production is usually divided into seven groups or general items: (1) manure and fertilizer practices, (2) cultivation practices, (3) irrigation practices, (4) hand-weeding, (5) harvesting operations, (6) distillation and (7) miscellaneous costs. The average production cost per pound is approximately 55 per cent of the total value of the peppermint oil. Local growers are attempting to reduce costs by increasing the yield per acre through improved cultural practices, fertilizers, etc. and increasing efficiency during the harvesting and distillation stage.

Peppermint is one of the most useful and important of the commercial volatile oils. Its cool, refreshing flavor makes it very popular for improving the taste of medicinal preparations, dentifrices, cough drops and cold remedies. The oil also possesses pronounced medicinal properties and is extensively used in pharmaceutical preparations. The main use, however, is for flavoring such items as chewing gum, candies, jellies, dentifrices, liqueurs and flavoring extracts. Also, a sizable portion of each year's production goes into export channels for shipment abroad.

At present, the greatest use of peppermint oil is for flavoring chewing gum. An estimated 50 per cent of the total national production is used for this purpose. According to Paul Tornow, Chemist, I. P. Callison and Sons, Chehalis, Washington, the biggest buyers of mint oil are Beech-Nut Packing Company of Canajoharie, New York, William Wrigley, Jr. Company of Chicago, and American Chicle Company of New York City[9].

The popular flavor of peppermint oil creates a demand for mint to flavor products manufactured by candy companies, its next most important users. From information obtainable, it is estimated that approximately

8 per cent of the total United States production goes into flavoring candies and confections.

Dentifrice companies manufacturing such items as tooth pastes, tooth powders and mouthwashes take about 5 per cent of the total producton. The cool, menthol flavor makes it very popular for use in such products.

Manufacturers of pharmaceutical and drug preparations probably use another 3 per cent. Its use in improving the taste of medicinal preparations is widespread.

Jelly and jam processing companies take another 1.5 per cent, and miscellaneous flavoring or extract companies take about 0.5 per cent. The remaining percentage goes into export channels.

The Willamette Valley is ideally situated climatically for the growth of peppermint. Excellent yields of a high quality oil are common. The average annual rainfall is around 40 inches per year with most of the precipitation occurring in the early fall and winter season. Normally, over 45 per cent of the rainfall occurs during the three winter months. Generally the summers are dry with abundant sunshine and ideal growing conditions for the mint plant. Less than 5 per cent of the annual rainfall occurs during the summer months. The climate is meteorologically designated as a mild subcoastal type. The growing season averages 195 days. The average date of the last moderate spring frost, or day with a minimum of 30°F. or lower, is April 12. The corresponding date of autumn frost is October 25[10]. The average summer rainfall is 1.83 inches. However, moisture is not a problem since an abundant source of water from the numerous creeks or shallow wells is available for overhead sprinkling during the dry season.

Peppermint requires a deep, rich soil with an abundance of organic matter. The soil should possess a loose texture, and the pH range should be between 6.0-7.5. Some of the heavy clay soils in part of the valley are not adapted to mint production. The majority of the mint fields are located on soils classified as Willamette sandy loam or Chehalis loam and variations thereof. Some of the most prolific mint farms are located on river bottom land which is especially adapted to mint growing. In addition to fertility, this soil possesses one of the essential requirements of mint growing, viz., excellent drainage. Contrasted to this type of soil are those of other mint producing areas of the U. S. With the exception of the past few years the muck land of southern Michigan and northern Indiana led the nation in mint production. The Pacific Northwest is the leading area in mint production at the present time. Some yields of over 100 lbs. of oil per acre were reported in 1947 from the irrigated sections of the Yakima Valley[11]. The type of soil predominating in this area is the Ephrata gravelly fine sandy loam and sandy loam type soil. However, the highest yields in this area were reported on Esquatzel Silt loam soils. It therefore appears that peppermint can tolerate considerable soil variations. Cultural methods and scientific

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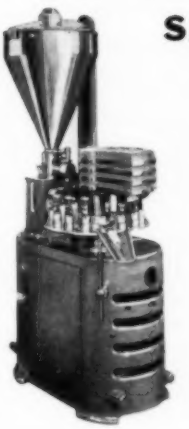

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"know-how" have proved to be important factors in the advancement of the Pacific Northwest as an important mint producing area.

The Willamette Valley mint growers have been leaders in the use of portable tubs and the application of mechanized methods of farming as a means of reducing labor costs. The mint growers have prospered because labor costs have been reduced and the yield of oil per acre has been consistently high. More research could be done to provide more efficient mechanical methods of reducing leaf loss and shattering during the loading process. Professor A. D. Hughes of the Department of Mechanical Engineering of Oregon State College is making some studies toward this goal.

The oil of peppermint is stored in the plant to the extent of about 99 per cent in the leaf, the remainder being in the stems. Of the ninety-nine per cent of oil from the leaf, approximately 80 per cent appears on the lower leaf surface and about 18 per cent on the upper leaf surface.

The general method employed in distilling the volatile oil is by steam distillation of the herb, vaporizing the oil, cooling the vapors into oil and water by use of condensers and collecting the material in suitable containers. The oil will separate from the water and float on the surface of the water. The equipment for such an operation has changed during the years of harvesting, but the basic method remains the same.

A unit for distillation must consist of a boiler to produce the steam, a retort, a condenser to convert the vapors to oil and water, and a receiver for the two liquids. The time taken to discharge and then reload a retort is less than the time required for complete distillation; it thus became obvious that a more efficient method for the multi-retort unit is to equip each tub with its own condenser.

The cost of a still used for mint may vary considerably. Many of them average over $3000. As the boiler is the most expensive single unit of the still, a mint farmer needs to make certain the size of the boiler is suitable to his needs. The boilers are operated under steam pressure of approximately 100 to 125 pounds. Most farmers in an area will cooperate on the purchase of equipment required for distillation because of the large cost.

A batch can be completely distilled in less than an hour if the mint has been properly cured. If the mint is still too fresh when placed in the retort, a prolonged time is required to complete the distillation. The dry foliage requires a shorter distillation time. Many of the farmers store the mint oil in 55 gallon barrels. On rare occasions a second distillation is run.

In order to ascertain whether field samples of Willamette Valley grown peppermint oils meet the official requirements for the oil, it was decided to gather samples from various farmers throughout the growing area within the Valley. As a preliminary to possible future research, thirteen different samples of first-run oil were obtained from nine different farms in Linn and Lane counties of Oregon. These counties are con-

sidered the center of the peppermint oil industry in the State of Oregon.

The samples were collected at the farms of the individual growers in mid-September of 1949. Since the four ounce samples were contributed by the growers, exact control of the degree of sampling was not possible. Pertinent information regarding each sample was obtained from the individual growers at the time of collecting. All samples were analyzed in mid-December of 1949, thus indicating that the maximum age of any sample at the time of anlysis was less than five months

Constants and Methods Used:

Refractive Index: This constant was determined with an Abbe refractometer at a temperature of 20°C.

Specific Gravity: A 10 ml pycnometer with attached thermometer was used in determining the specific gravity at a temperature of 20°C.

Esters: The U. S. P. 14 method was used and the esters were calculated as menthyl acetate.

Total Menthol: The U. S. P. 14 procedure and formula for calculating the per cent of menthol were employed.

TABLE 1

Physical and Chemical Constants of Various Willamette Valley Peppermint Samples.

Sample Number	*Refractive Index*	*Specific Gravity*	*Per cent Eselrs*	*Per cent Total Menthol*
1-A	1.4585	.894	10.04	47.53
1-B	1.4605	.902	5.154	38.78
2-A	1.4625	.902	5.235	50.30
2-B	1.4621	.900	5.649	64.77
3	1.4576	.898	5.862	59.26
4	1.4600	.898	5.07	49.80
5-A	1.4602	.900	6.77	54.28
5-B	1.4589	.898	4.68	44.28
5-C	1.4587	.897	4.80	42.41
6	1.4595	.898	7.575	46.71
7	1.4577	.898	4.80	39.50
8	1.4582	.902	7.575	46.82
9-A	1.4575	.899	7.168	53.10
9-C	1.4582	.903	0.626	55.22

TABLE 2

Comparison of Minimum, Maximum and Average Results to Official Requirements.

	Refractive Index	*Specific Gravity*	*Per cent Esters*	*Per cent Total Menthol*
U.S.P. Requirement	1.4590-1.4650	0.896-0.098	Not less than 5%	Not less than 50%
Minimum	1.4575	0.891	4.68	38.78
Maximum	1.4625	0.902	10.04	64.77
Average	1.4595	0.899	6.18	49.04

The values obtained for the various physical and chemical constants of natural Willamette Valley pep-

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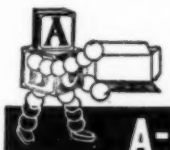

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permint oils are presented in tabular form. Table 1 shows the results obtained from each individual sample. Sample 9 consists of redistilled oil from the overflow so should not be used as a basis of comparison. Each number indicates an oil from a different grower, the alphabetical designation indicates an oil from a different plot by the same grower. Table 2 is a comparison of the official requirements to the minimum, maximum and average results obtained from the samples analyzed.

Two previous publications (12, 13) indicate that Willamette peppermint oils meet the official U.S.P. requirements. The results published were based on analysis of samples received from an important Northwest buyer of essential oils. One of the published results represents the average of over two hundred samples of natural oil obtained in the years 1943, 1944, 1945 (20). The second report represented a composite of the natural 1949 oil that was as nearly representative as possible of the entire year's production (21). The results of our analysis based on the average of thirteen samples shows that official requirements were met except for menthol which was less than one per cent low. A possible explanation for the low menthol follows:

1. The exact time of sampling was not known. The general opinion is that the menthol content increases as the season progresses.

2. The samples were donated so no control was exercised as to the source (the sample may have been from a fifty pound lot or it may have been from a four hundred pound lot).

3. The samples analyzed were insufficient in numbers to form definite conclusions.

Of interest, the following observations on several of the samples were noted: Sample 2-A was from a field that was fall plowed which resulted in an early and more prolific growth and less weeds. Sample 2-B was from a spring plowed field with less growth and more weeds. The analysis showed that the quality of 2-B was better even though the quantity per acre was less. The grower of samples 5-A, B and C furnished the following details on the samples obtained from him: Sample 5-A was obtained from five year old mint on an eight acre field that was fertilized with one hundred pounds of potash and two hundred pounds of 0-16-20 (no nitrogen, 16 per cent phosphorous and 20 per cent potassium) per acre. This field was sheeped and was sprinkled by the use of over-head irrigation every two weeks. The field averaged fifty-two pounds of oil per acre. Sample 5-B consisted of a fifteen acre field of five year old mint. The fertilization program consisted of fifty pounds of 33 per cent nitrogen, fifty pounds of potash, and three hundred pounds of 0-16-20 per acre This field was hand-weeded and not sheeped with sprinkling every two weeks as was the previous field. This plot averaged forty-four pounds per acre. Sample 5-6 was obtained from an eighty acre field of two year old mint. This was fertilized at the rate of one hundred pounds of potash, two hundred pounds of 33 per cent nitrogen, and three hundred pounds of 0-16-20 per

acre. This differed from the other two fields in that it was watered every seven days. This field averaged seventy-one pounds per acre. The results are presented in table 1.

From an analysis viewpoint, some interesting data may present itself in future studies of the characteristics of peppermint oil grown in the Willamette Valley. The effect, for example, of fall plowing or spring plowing on a plot may be of value. One of the samples analyzed came from a stand of five year old mint. By carefully checking the age of the mint and comparing the results obtained in the chemical analysis of the oil from each plot, a determination can be made as to the best yield, both in quality and quantity, obtained from the fields of mint of different ages. The analysis of an oil sample from a field which has grown crops on a rotational basis may possibly lead to one particular crop that is most suitable to rotate with peppermint to insure the highest quality oil and also the highest quality rotational crop.

A comparison of the time interval between sprinklings may possibly prove of interest. A careful check of the fertilization program may lead to some valuble conclusions.

A study of peppermint oil production needs to continue over a period of at least four or five years to be of real value for comparison study. This study should include a large number of samples from representative farmers in the area with complete data on cultural practices and other pertinent information which may affect the quality and quantity of oil produced. At the present time on the Oregon State College campus studies are continuing on more efficient distillation methods under the direction of Professor Arthur Hughes of the Mechanical Engineering department under a grant from the William J. Wrigley, Jr. Company, Chicago. Beech-Nut has also awarded a $9000 research grant to the Department of Botany and Plant Pathology at Oregon State College for a three year program to study first peppermint rust, second verticillium wilt and third root-rot condition of peppermint plant.

The growing of peppermint oil in Oregon has developed into an important economic agricultural enterprise to the extent that on February 10, 1950, a nonprofit corporation known as "The Oregon Essential Oil Growers League" was formed.

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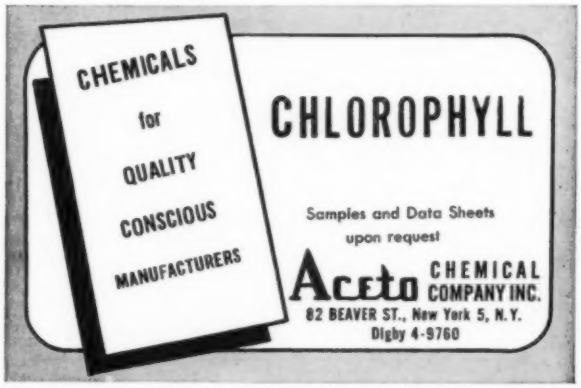

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Atlas Powder Co. 717
Avon Products, Inc. 709

Baker Chemical Co., J. T. 774
Baker, H. J. & Bro. 798
Beauty Fashion. 736
Benzol Products Company 844
Braun, W., Co. 827
Brown Bag Filling Machine Co., Inc. 845
Bush & Co., W. J. 847

Calco Chemical Division 712
Carbide & Carbon Chemicals Co., A Division of Union Carbide & Carbon Corp. 730
Carr-Lowrey Glass Co. 771
Cavalla, Inc., A. 848
Columbia-Southern Chemical Corp. 716
Commercial Solvents Corp. 708
Continental Can Company 772
Corn Products Sales Company 705, 814
Crown Cork & Seal Company 773

de Laire Division, Dodge & Olcott, Inc. 713
Devold Oil Co., Peder 835
Distillation Products, Inc. 720
Dodge & Olcott, Inc. 710
Dow Chemical Co. 778
Dreyer, P. R., Inc. 715
du Pont de Nemours & Co., Inc. . . . Insert facing 721
Durlin & Co. . . . . Insert facing 713

Economic Machinery Company 829
Emery Industries, Inc. 727
Ertel Engineering Corp. 831

Fairmount Chemical Co., Inc. 851
Faraday Chemical Corp. 851
Felton Chemical Co., Inc. 786
Firmenich & Co., Inc. . . . . Cover 4
Florasynth Labs., Inc. 724
French, Inc., Benj. 812
Fritzsche Brothers, Inc. . . . . Insert bet. 816-817

Gair Company, Inc., Robert . . . Insert facing 768
Givaudan-Delawanna, Inc. . . . . Insert bet. 720-721
Glass Products Co. 849
Glycerine Producers' Assn. . . . . Insert facing 736
Goldschmidt Chem. Corp. 735
Greeff & Co., R. W. 814
Grongoire 844
Gross, A. & Co. 721

Hanovia Chemical & Mfg. Co. 825
Haring Equipment Corp. 845
Heyden Chemical Corp. 782
Hoffmann-LaRoche, Inc. 818
Hooker Electrochemical Co. 804
Hormann & Co., F. R. 814
Horn, John. 848
Hotel Strand. 820
Huisking & Co., Inc., Chas. L. 835

Industrial Chemical Sales. . . . . Cover 2
Inland Alkaloid Co. 838
International Minerals & Chemicals Co. 826
Island Equipment Corp. 840

Kelton Cosmetics Co. 837
Kessler Chemical Co. 808
Kimberly-Clark Corp. 770
Kohnstamm, H. & Co. . . . . Insert facing 712
Kolar Laboratories, Inc. 725
Kolmar Laboratories. 723

Leonhard Wax Co., Theodore 851
Lipette Company, Div. Perin Products Corp. . . 762
Lueders & Co., George. 714
Lusteroid Container Co., Inc. 839

Magnus, Mabee & Reynard, Inc. 733
Mallinckrodt Chemical Wks. . . . . Insert facing 737
Maschmeijer, A., Jr. 764
Merck & Co., Inc. 732
Metal Glass Products Co. 832
Michel & Co., Inc., M. 846
Mills Corp., Elmer E. 788
Mir-I-Ben Lipstick Laboratories. 851
Monsanto Chemical Company 722

Naugatuck Aromatics. 726
Neumann, Buslee & Wolfe, Inc. 841
New Jersey Zinc Co. 828
New York Quinine & Chemical Works Inc. 731
Norda Essential Oil & Chemical Co. 834, 838, 842, 849

Orbis Products Corp. 718
Owens-Illinois Glass Co. . . . . Insert facing 761
Owens-Illinois Glass Co. . . . . Between 768-769

Parsons-Plymouth, Inc., M. W. 808
Penick & Co., S. B. 734
Pennsylvania Glass Products Co., Inc. 769
Pennsylvania Refining Co. 729
Pfaltz & Bauer Co., Inc. 848
Pfizer & Co., Inc., Chas. 802
Pittsburgh Lectrodryer Corp. 790
Plaskon Division, Libbey-Owens-Ford Glass Company . . . . . Insert facing 760
Plax Corporation, Subsidiary of Emhart Mfg. Co. . . . . Insert facing 769
Polak's Frutal Works. 806
Popper & Sons, Inc. 840
Progressive Labelling Machine, Inc. 851
Pulverizing Machinery Company. Insert facing 793

Reheis Co., Inc. 824
Richford Corporation. 768
Roure-Dupont, Inc. 728

Santonin Company of America, Inc. 835
Scandia Manufacturing Co. 851
Schimmel & Co., Inc. 784
Standard Oil Company. 707
Standard Pharmacal Company. 842
Sterwin Chemical, Inc. 851
Stokes Machine Co., F. J. . . . . Insert facing 792
Stokes & Smith Co. 794
Stokes Machine Co., F. J. . . . . Insert facing 792
Strong Cobb & Co., Inc. 711
Sunkist Growers. 766
Synfleur Scientific Labs., Inc. 719
Syntomatic Corp. 796

Tamms Industries, Inc. 848
Thurston & Braidich. 846
Toledo Scale Company. 843
Tombarel Products Corp. 800
Trade-Mark Record Book. 820

Ungerer & Co., Inc. . . . . Cover 3
Union Carbide & Carbon Corp., Carbide & Carbon Chemicals Co. 730
U. S. Bottlers Machinery Co. 820
U. S. Industrial Chemicals, Inc. Insert bet. 728-729

van-Ameringen-Haebler, Inc. . . . Insert bet. 736-737
Verley & Company, Albert. . . . Insert bet. 776-777
Verona Chemical Company. 780

Welch, Holme & Clark, Inc. 833
Whittaker, Clark & Daniels, Inc. 814
Will & Baumer Candle Co. 832
Witco Chemical Co. 852
Wolf, Jacques, & Co. 834